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REPORT BY THE

RELEASED

# Comptroller General

OF THE UNITED STATES

## Water Project Construction Backlog-- A Serious Problem With No Easy Solution

The Army Corps of Engineers and the Bureau of Reclamation started fiscal year 1982 with 934 authorized water projects needing about \$60 billion to complete construction. For fiscal year 1982, the Congress provided construction funds for 289 of these projects, but did not fund the remaining 645 projects needing about \$24.5 billion to complete. About \$21.9 billion had already been spent on the 289 funded projects. Another \$35.5 billion--including an estimate for future inflation of Corps projects--is needed to complete them. The backlog has grown in actual dollars because funding has not been sufficient to offset inflation and other cost increases.

No easy answers exist for eliminating the construction backlog. However, this report discusses several alternatives which taken either singly or in combination could lessen it.



GAO/RCED-83-49  
JANUARY 26, 1983

524490

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COMPTROLLER GENERAL OF THE UNITED STATES  
WASHINGTON D.C. 20548

B-210325

The Honorable Elliott H. Levitas  
Chairman, Subcommittee on  
Investigations and Oversight  
Committee on Public Works and  
Transportation  
House of Representatives

Dear Mr. Chairman:

This report responds to your request of April 30, 1982, and subsequent discussions with your office requesting information on the progress being made by the U.S. Army Corps of Engineers and the Bureau of Reclamation in reducing the backlog of authorized water projects that need funds to complete construction. The report also discusses options which offer opportunities to reduce the construction backlog.

We did not obtain the agencies' comments on this report. However, the matters covered in the report were discussed with officials of the Departments of the Interior and the Army; Bureau of Reclamation; and Corps of Engineers and their views are included in the report where appropriate.

As arranged with your office, we plan no further distribution of this report until 30 days from its date unless you publicly announce its contents earlier. At that time we will send copies to appropriate House and Senate committees; Secretaries of Defense, the Interior, and the Army; Director, Office of Management and Budget; and other interested parties. We will also make copies available to others upon request.

Sincerely yours,

A handwritten signature in cursive script that reads "Charles A. Bowsher".

Comptroller General  
of the United States



D I G E S T

Whenever costs to construct Federal projects increase during the year by more than the amount appropriated, a construction backlog develops. Concerned about the Corps of Engineers' and Bureau of Reclamation's water project construction backlog, the Chairman, Subcommittee on Investigations and Oversight, House Committee on Public Works and Transportation, asked GAO to review those agencies' authorized water projects that need funds to complete construction. Among other things, GAO was asked to determine the impact of escalating costs on the construction backlog, the reasons for the cost increases, and options for dealing with the backlog.

IS THERE A WATER PROJECT  
CONSTRUCTION BACKLOG?

Yes. Using the latest data available (October 1, 1981), the Corps and the Bureau had 934 authorized water projects needing about \$60 billion to complete construction. In recent years, the trend has been for the construction backlog costs to grow, as measured by one key growth indicator--change over time in actual dollars. This growth has occurred because construction funding has not been sufficient to offset inflation and other project cost increases. For example, the Bureau had a 19-year backlog in 1974 which climbed to 23 years in 1982 based on appropriations provided in those years. (See pp. 6 to 16.)

WHAT IS THE IMPACT ON PROJECTS  
CURRENTLY BEING FUNDED FOR  
CONSTRUCTION?

Unless future funding is sufficient to cover inflation and other cost increases, some Corps and Bureau water projects receiving fiscal year 1982 construction funding will probably not be completed.

GAO assessed the water resource project backlog issue by analyzing the 289 Corps and

Bureau projects funded for construction for fiscal year 1982. The backlog of construction costs to complete the 289 projects totaled \$35.5 billion--\$22.7 billion for the Corps, which includes an estimate for future inflation, and \$12.8 billion for the Bureau, without an estimate for future inflation--as of October 1, 1981. The remaining 645 authorized projects were not included in GAO's analyses due to the uncertainty of their future funding although the agencies consider many to be viable projects. (See pp. 1, 4, 7, and 11.)

GAO's analyses included a range of appropriation levels that the Corps and the Bureau have experienced in recent years. Further, GAO applied varying inflation rates in its analyses of the Bureau projects since Bureau cost estimates do not include an amount for future inflation as was done by the Corps for its projects. The analyses did not consider new construction starts or other project cost increases.

With annual construction funding of \$1.6 billion, it would take the Corps about 14 years to complete its backlog of \$22.7 billion worth of projects funded for construction for fiscal year 1982. However, the Corps' annual construction appropriation has averaged about \$1.4 billion over the past 10 years, with \$1.6 billion being its largest appropriation to date. With annual construction funding of \$1.4 billion, it would take the Corps about 16 years to complete its projects. (See p. 9.)

The Bureau would not be able to eliminate its backlog of \$12.8 billion assuming 4 percent or more inflation rates and appropriations of \$440 million (Bureau construction appropriations have averaged about \$503 million over the past 10 years). At annual appropriations of \$660 million and a 4-percent inflation rate, the projects funded for construction for fiscal year 1982 could be completed in about 30 years. (See pp. 10 to 15.)

Corps and Bureau officials believe that some projects, or parts of projects, funded for construction for fiscal year 1982 may not be completed due to such things as lack

of local support for the projects and the projects' no longer being economically feasible at current interest rates. Therefore, these officials stated that the backlog amounts should be less than those used by GAO in its analyses. For example, the Corps believes its construction backlog is about \$15.4 billion rather than the \$22.7 billion GAO used in its analyses. (See p. 10.)

Also, some of the 289 projects GAO used in its analyses may not be completed because future funding may not be sufficient to construct all water projects contemplated in a timely manner. Factors such as new construction starts and increasing operation and maintenance costs suggest future funding could be a problem. However, the decision whether to complete the 289 projects rests with the Congress. (See pp. 1, 6, 7, 16, and 21.)

ARE THERE OTHER IMPACTS ON  
THE BACKLOG THAT NEED TO BE  
CONSIDERED?

Yes. New construction starts and increasing operation and maintenance costs add to the competition for available water resource funds. For example, the administration has recommended new Corps and Bureau water project construction starts which, if approved by the Congress, will add to the backlog. (See pp. 16 to 20.)

Operation and maintenance funding is taking an increasing share of the moneys spent on water resource activities. For example, operation and maintenance funding was about 23 percent of the Corps' total water resource appropriation in 1973 but by 1982 had grown to about 37 percent. This compares to the Bureau's 9 percent in 1973 and 26 percent in 1982. (See pp. 16 to 19.)

Agency officials told GAO that this trend is likely to continue in the foreseeable future because additional operation and maintenance moneys will be needed as additional projects are completed and others get older. Corps officials are concerned about this upward trend in operation and maintenance costs, because of its impact on funds available for construction.

Unlike the Corps, most of the Bureau's operation and maintenance funding comes from moneys reimbursed to the Federal Government through contracts with users of Federal project water. (See pp. 16 to 20.)

DO THE AGENCIES HAVE SPECIFIC  
LEGISLATION DESIGNED TO  
REDUCE THE BACKLOG?

The Corps does, but its impact has been small. The Bureau has none. Although 453 Corps projects have been deauthorized pursuant to the Water Resources Development Act of 1974, as amended (Public Law 93-251), the program has been of little value in reducing the construction backlog since an 8-year period of not receiving any appropriations is required for deauthorization eligibility and consideration. Most of the projects were deauthorized because they were not economically feasible or did not have local support; consequently, they probably would not have been constructed anyway. A major reason for this legislation was to eliminate the backlog of authorized but unfunded and locally unsupported projects, but Corps officials said that it has had minimal impact on Corps operations since the projects that have been deauthorized were inactive for some time. (See pp. 20 and 21.)

ARE THERE OTHER ALTERNATIVES  
FOR REDUCING THE BACKLOG?

According to Corps, Bureau, and other water resource officials, several alternatives offer opportunities to reduce the construction backlog, such as providing additional funding and establishing a priority ranking system so that, if sufficient funds are not available for all projects, only the highest priority ones would be funded for construction. Additional funding for the construction programs could be provided by either increasing the annual water construction appropriation or having non-Federal entities share more costs. However, increased funding is questionable. Current economic conditions are creating keen competition among programs for dollars, making it uncertain

that (1) more Federal funds will be appropriated for water project construction and (2) non-Federal entities will have the financial resources or be willing to fill this funding shortfall. (See pp. 22 to 25.)

Setting priorities for water construction projects will require objective criteria to be developed to rank projects for funding. This, however, will not be an easy task since many factors--economic, social, environmental, and political--will need to be considered and evaluated. (See pp. 24 and 25.)

GAO did not obtain comments from the Corps of Engineers or the Bureau of Reclamation. However, the matters covered in the report were discussed with the agencies' officials and their views were included in the report where appropriate. (See p. 5.)



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ABBREVIATIONS

FY	fiscal year
GAO	General Accounting Office
OMB	Office of Management and Budget
O&M	operation and maintenance

## CHAPTER 1

### INTRODUCTION

The planning and construction of water resources projects are important items in Federal Government expenditures. For fiscal years 1981 and 1982, appropriations for projects constructed by the two principal construction agencies--the U.S. Army Corps of Engineers and the Department of the Interior's Bureau of Reclamation--totaled almost \$2 billion a year. For fiscal year 1982, these agencies funded for construction 289 projects with an estimated Federal cost of \$57.4 billion--218 Corps projects estimated to cost \$38.1 billion and 71 Bureau projects estimated to cost \$19.3 billion. In addition to these funded projects, 645 Corps and Bureau projects authorized by the Congress and estimated to cost about \$24 billion to complete were awaiting construction funding or were being delayed for various reasons, such as less than optimum funding available, lawsuits over environmental issues, and loss of local support. Appendixes II through V contain lists of active authorized projects by agency and funding status along with construction cost data. Appendix I describes how Corps and Bureau water resource projects are initiated, planned, and authorized.

### CORPS OF ENGINEERS' WATER RESOURCE PROJECT RESPONSIBILITIES

The Army Corps of Engineers' water resources responsibility began with an Act of Congress in 1824 with the enactment of the first bill for improving rivers and harbors for navigation. Since then, the Corps' functional responsibility has been greatly expanded to include flood control, beach erosion protection, power, recreation, and other purposes authorized by the Congress.

The Secretary of the Army oversees the direction of the Corps of Engineers and its civil works program. The Assistant Secretary of the Army (Civil Works), along with the Office of the Chief of Engineers, is responsible for central or critical management areas, including general programming of the Corps' civil works budget and for setting priorities for new construction starts. The Office of the Chief of Engineers contains the headquarters staff assisting the Chief of Engineers in planning, directing, and controlling Corps activities. The Director of Civil Works is responsible to the Chief of Engineers for supervising staff responsible for planning, designing, constructing, operating, and maintaining civil works projects. Most of the civil works program is accomplished through 11 division offices. Responsibilities of each division include a major watershed or group of contiguous lesser watersheds. Nine divisions supervise 36 Corps district offices, the principal Corps planning and project implementation offices. The district offices perform Corps planning, design, construction, operation, and maintenance work. Like division boundaries, district office boundaries are defined by natural watersheds to lend coherence to planning and construction. The Board of Engineers

for Rivers and Harbors reviews division engineer reports and issues its findings and recommendations on these reports to the Chief of Engineers.

#### BUREAU OF RECLAMATION'S WATER RESOURCE PROJECT RESPONSIBILITIES

The Bureau of Reclamation was first created as the Reclamation Service within the Geological Survey in 1902 and was formally established as a separate agency in the Department of the Interior in 1907. Initially, the Bureau's mission was the reclamation of the arid and semiarid lands of the West. Since 1902, however, the Bureau's function has expanded to building and operating multipurpose water projects, such as Hoover Dam and Grand Coulee Dam which, among other things, supply municipal and industrial water, hydroelectric power generation, flood control, navigation, and recreation opportunities.

The Bureau operates under the direction of the Assistant Secretary of the Interior (Land and Water Resources). The Commissioner of Reclamation manages the Bureau through seven regional directors who are responsible for planning, design, construction, repayment, and operation and maintenance activities in their respective regions. The Bureau's regions are aligned along drainage basins of rivers and streams.

#### EVOLUTION OF WATER PROJECT AUTHORIZATION AND DEVELOPMENT

Historically, authorizations of water projects have met little opposition in the Congress. Proponents of the existing authorization process contend that it has enabled the development of the Federal system of water projects. According to the Assistant Chief, Corps Planning Division, the building of many major water construction projects was the direct result of the Federal Government's efforts to create employment opportunities, stimulate the Depression-era economy, and maximize the Nation's natural resources. However, with the environmental movement of the late 1960's and 1970's, the American public became concerned with the environmental and social consequences of Federal water construction projects. Passage of several laws, including the National Environmental Policy Act of 1969, the Flood Control Act of 1970, and the Water Resources Planning Act of 1965, demonstrated the Congress' desire to develop objective water construction development criteria.

The Carter and Reagan administrations have attempted to influence the selection of water projects for construction by recommending deletion or deferrals of project funding. The Carter administration developed a two-edged approach to water resources development through (1) further rationalization of the water project selection process and (2) development of a "hit list" of projects considered unworthy of Federal funding. The result was that 9 of 18 projects that the Carter administration wanted stopped were not funded in fiscal year 1978. More recently, President

Reagan recommended in the administration's Economic Recovery Package of February 1981 an 11-percent reduction in the water project agencies' construction programs. In August 1981, the Congress passed the Omnibus Budget Reconciliation Act of 1981 (Public Law 97-35), which placed caps on future year funding for Corps water resource construction programs. For fiscal year 1982, the construction cap was \$1.547 billion; for fiscal year 1983, \$1.689 billion; and for fiscal year 1984, \$1.576 billion. No cap was placed on Bureau projects, for which fiscal year 1982 appropriations were about \$550 million. The Bureau requested \$667 million for fiscal year 1983.

In May 1982, at hearings held by the Subcommittee on Energy and Water Development, House Committee on Appropriations, the Assistant Secretary of the Army (Civil Works) testified that "pressure on the Federal budget precludes the Federal Government from being able to finance all--or even a major portion--of the water projects which this Nation needs."

In light of the present tight budget situation and efforts to reduce Federal spending, water resources project funding is beginning to receive intense scrutiny within the Congress and the executive branch. Members of Congress who previously did not question the process of selecting, authorizing, and constructing projects are now reconsidering. The Congress today appears more willing to reevaluate the desirability of Federal funding for many water resources projects, focusing more attention on project selection, authorization, and construction. In this regard, the Assistant Chief of the Corps Programs Division and the Bureau's Programing Planning Coordinator told us that most of the "better" projects have been built and that each agency has to exert extra care in making decisions about future water construction activities.

#### OBJECTIVE, SCOPE, AND METHODOLOGY

Responding to an April 30, 1982, letter from the Chairman, Subcommittee on Investigations and Oversight, House Committee on Public Works and Transportation, we reviewed the progress being made by the U.S. Army Corps of Engineers and the Bureau of Reclamation in constructing water resources projects. The subcommittee requested that we provide information on the (1) status category of the two agencies' construction projects, including a list of the active authorized projects for each agency, (2) adverse effects of delays and backlogs, (3) alternatives and/or options for dealing with project construction backlogs, and (4) agencies' project development processes from initiation through construction.

To determine the status of the two agencies' construction programs, we visited the agencies' headquarters and obtained information on the status of all authorized projects in the agencies' fiscal year 1982 construction programs. For each project, we obtained (1) the project's name, location, and status, (2) total estimated construction costs, (3) total dollars expended

prior to fiscal year 1982, and (4) amount of money needed to complete the project. We used the most recent data available at the time we did our work. For the Corps, we obtained project cost data contained as of October 1, 1981, in the computer-based Civil Works Information System. Bureau cost data was obtained from project cost history information as of October 1, 1981, which the agency maintains for active projects. The Corps categorizes the status of its projects as either complete, active, deferred, or inactive. The Bureau uses three categories: complete, active, and inactive.

In analyzing the water resource project backlog issue, we took a conservative approach and defined the term "construction backlog" as all active projects funded for construction by the Congress for fiscal year 1982. Consequently, the term construction backlog as used in this report does not include authorized projects categorized by the agencies in any category other than active nor does it include any project, regardless of category, that was not funded by the Congress for fiscal year 1982. We measured construction backlog growth using one key growth indicator--change over time in actual dollars to complete construction. There are other ways to measure construction backlog growth, such as changes in the number of construction projects and constant dollar value of construction work yet to be completed, which may result in different perspectives on construction cost growth. However, some of the information needed to make such measurements, such as the number of projects, cost to complete construction, and future inflation estimates for Corps projects authorized in past years, was not readily available.

In preparing project construction cost estimates on active funded projects, the Corps includes an allowance for future inflation, but the Bureau does not. While the Bureau can include an allowance for future inflation in its budget, it has at the recommendation of an Office of Management and Budget (OMB) budget examiner elected not to do so. This decision was made because the large dollar value of Bureau projects and irregular scheduling of construction work could inaccurately portray future construction costs for a single year. Therefore, for purposes of our analyses, we applied varying appropriation levels the Corps has experienced in recent years to determine how such funding would affect its backlog but made no adjustment for inflation. Since the Bureau does not include future inflation in its cost estimates, we used varying inflation rates that reflected rates water construction agencies recently experienced as well as varying appropriation levels to determine how such funding and inflation would affect its backlog. Our analyses did not consider future new construction starts or other future project costs increases, such as design changes.

To determine the extent to which Corps project construction backlog costs have increased and the reasons for increases, we analyzed only cost history information that was readily available on the 242 active Corps projects contained in its computer-based Cost Growth System. We compared information compiled on these

projects' construction costs as of October 1, 1981, with the original construction cost estimates. Information on the reasons for the cost increases was also extracted from the system. Of the 218 projects we defined as the Corps' construction backlog, 174 were included in the 242 Cost Growth System projects. According to the Corps manager of this system, the reasons for the cost increases for the 242 projects are representative of why the Corps backlog has grown. He said that the 44 (218 less 174) projects excluded from this system and the 68 (242 less 174) projects added to the system had characteristics similar to the 218 projects. For the Bureau, we used project cost history information which the agency maintains for active projects. We compared construction cost information as of October 1, 1981, for 19 Bureau projects funded for fiscal year 1982, with the original construction cost estimates. Information on the reasons for the increases in costs for the 19 projects was also obtained.

We did not verify the propriety of the Corps and Bureau construction cost figures because of time constraints, the volume of data involved, and the large number of field offices that would need to be visited. However, the information obtained on construction costs and other data as contained in appendixes II through V was provided to agency officials who concurred that this was the best information available.

To develop alternatives and/or options for dealing with the backlog issue, we interviewed Corps and Bureau headquarters officials in the planning, policy, and programing areas. In addition, we obtained the views of knowledgeable officials within the Water Resources Council, 1/ the Congressional Research Service, and the Water Resources Congress. We also reviewed program directives and applicable laws and obtained information on water project planning and construction starts.

To understand how water resources projects are initiated, planned, and authorized to be built, we interviewed and gathered available information on each agency's planning process from appropriate Corps and Bureau planning division officials.

We did not obtain comments from the Corps and Bureau. However, the matters covered in the report were discussed with the agencies' officials and their views were included in the report where appropriate.

The review was performed in accordance with generally accepted government audit standards.

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1/While the Water Resources Council staff was released on September 28, 1982, its functions are being performed by Council members' staffs. Council members are the Secretaries of the Interior, the Army, Agriculture, Transportation, Commerce, Energy, and Housing and Urban Development and the Administrator of the Environmental Protection Agency.

## CHAPTER 2

### THE CONSTRUCTION BACKLOG IS GROWING

Hundreds of authorized Corps and Bureau water projects need funds to complete construction. Projected need has grown from \$30 billion at the beginning of fiscal year 1975 to about \$60 billion at the beginning of fiscal year 1982. Of the \$60 billion, \$35.5 billion--\$22.7 billion for the Corps, which includes an amount for future inflation, and \$12.8 billion for the Bureau, without an amount for future inflation--represents the backlog as used in this report since projects needing these funds to complete construction were active and funded for fiscal year 1982. The backlog has grown in terms of actual dollars because many more projects have been authorized for construction than can be sufficiently funded under the current water resources development spending levels. Based on our analyses of the construction agencies' project data, it is likely that the backlog of water construction projects will continue to increase because the level of construction funding has not been sufficient to offset costs due to inflation. In addition, any new projects or changes in existing projects that increase costs will further aggravate the problem by adding costs to the backlog.

Corps and Bureau officials believe that the agencies' cost projections to complete active projects are overstated because some of the work will probably never be accomplished for such reasons as lack of local support and poor benefit/cost ratios. Although Corps Policy and Program Division officials and Bureau Program and Planning Division officials have expressed concern about the construction backlogs, they said that the backlogs' existence has not significantly affected their construction programs.

While the backlogs' existence may not have significantly affected the agencies' construction programs, whether or not future funding will be sufficient to cover water project costs is debatable. Several factors will have a major influence over whether or not current and future projects will be completed or completed in a timely manner. These factors include obtaining appropriations to adequately fund

- projects under construction, including increases due to inflation, design changes, and project modification;
- proposed new construction project starts; and
- rehabilitation and replacement projects for aging water project facilities.

CORPS OF ENGINEERS'  
CONSTRUCTION BACKLOG

At the beginning of fiscal year 1982, the Corps had a total of 832 unfinished authorized projects estimated to cost \$43.4 billion to complete. Since the Corps included an allowance for future inflation in only 218 active projects funded for construction for fiscal year 1982, the cost to complete the remaining 614 projects is understated. The Corps, with its fiscal year 1981 budget request, began including an allowance for future inflation in its cost estimates for scheduled construction projects to give the Congress a better estimate of total project cost. The Corps uses construction inflation rates developed by an economic forecasting organization called Data Resources Incorporated. The following table summarizes the dollar value of the Corps' authorized water projects not completed at the beginning of fiscal year 1982.

<u>Category</u>	<u>Number of projects</u>	<u>Total estimated Federal cost</u>	<u>Expenditures thru FY 81 (note a)</u>	<u>Balance to complete after FY 81</u>
------(billions)-----				
Active:				
Funded for construction for FY 1982	218	\$38.1	\$15.4	\$22.7
Not funded for construction for FY 1982	<u>252</u>	<u>14.7</u>	<u>1.5</u>	<u>13.2</u>
Total active	470	\$52.8	\$16.9	\$35.9
Deferred	132	1.9	.1	1.8
Inactive	<u>230</u>	<u>5.8</u>	<u>.1</u>	<u>5.7</u>
Total	<u>832</u>	<u>\$60.5</u>	<u>\$17.1</u>	<u>\$43.4</u>

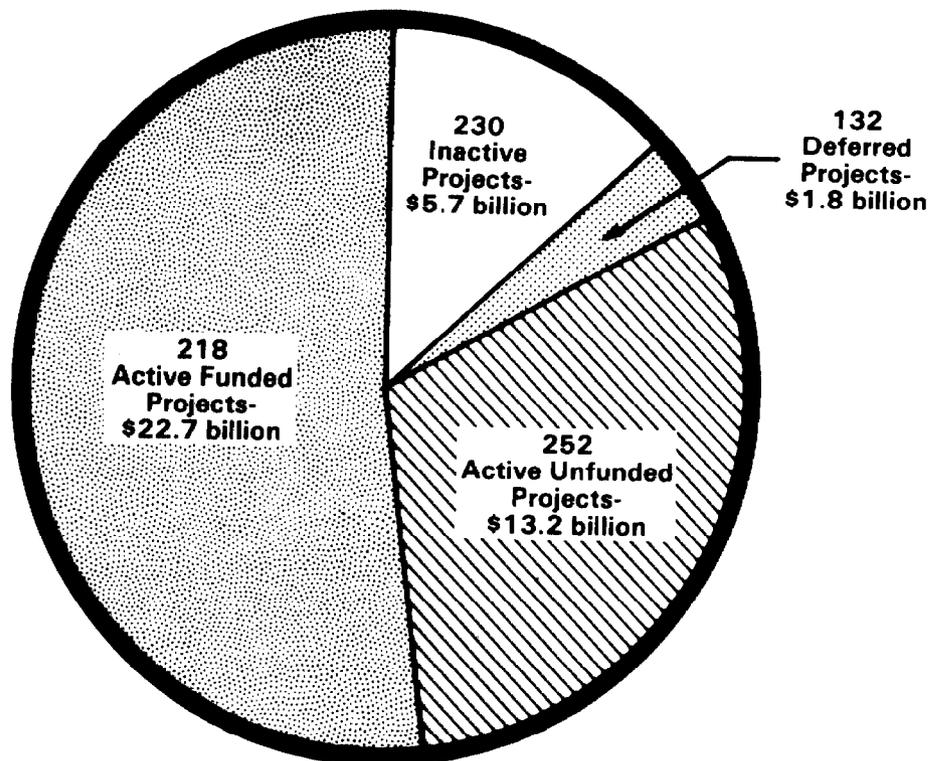
a/Includes actual expenditures through fiscal year 1980 plus allocations for fiscal year 1981.

For fiscal year 1982, 218 active authorized projects were funded for construction with an estimated cost of \$22.7 billion to complete beyond fiscal year 1981 (\$15.4 billion to complete is the revised Corps estimate as discussed on page 10). In analyzing the water resource project backlog issue, we took a conservative approach and included only these 218 projects. We recognize that the remaining 614 active unfunded, deferred, and

inactive projects are a part of the construction backlog, but their future funding is uncertain--especially the deferred and inactive projects. Also, combining these cost estimates for analysis with the active budgeted projects could be misleading since active budgeted projects include a future inflation factor while the other projects do not.

The Corps classified 132 projects as "deferred" with a total cost of \$1.8 billion to complete. Deferred projects are projects which need to be restudied to determine (1) whether they are economically justified or (2) if local interests are currently able to fulfill their agreed-upon responsibilities, such as financing, rights-of-way, and easements for those projects they do not oppose. Deferred projects can be reclassified as active if the restudy shows that the project's benefits outweigh its costs or the project sponsors are able to fulfill the required conditions of local cooperation. The Corps categorized 230 projects as "inactive" (projects not likely to be built for a number of reasons, such as costs exceeding benefits or lack of local support) at a total cost of \$5.7 billion to complete. The relative amounts of dollars needed to complete construction at the beginning of fiscal year 1982 by category of Corps authorized projects is shown in the graph below.

**BALANCE NEEDED TO COMPLETE  
CORPS' FY 1982 CONSTRUCTION CATEGORIES**



### Funding has not kept up with inflation

Corps records show that inflation is the major cause of the cost changes for Corps projects. Moreover, the level of construction funding has not been sufficient to compensate for inflation in recent years. For example, information readily available from the Corps Cost Growth System on 242 projects (including 174 which were funded for fiscal year 1982) showed that project construction costs had increased by about \$13.5 billion since these projects were originally authorized for construction. Inflation accounted for about 51 percent of this increase, and design and project modification changes for 40 percent. The remaining 9 percent was attributed to such things as scope and estimating changes. The Corps reported that inflation accounted for about 92 percent of the backlog's \$5.6 billion increase in fiscal year 1980 and 93 percent of the \$2 billion increase in fiscal year 1981. On the other hand, the Corps' actual appropriations for the same time frame have been relatively stable--about \$1.6 billion and \$1.4 billion, respectively. The Corps' fiscal year 1983 construction budget request is for about \$1.2 billion, about \$200 million less than the fiscal year 1982 appropriation. Unless additional funds are appropriated to cover funding shortfalls, Corps Programs Division officials stated that projects will either take longer to complete or their scope and quantity will have to be reduced.

### Backlog may take years to eliminate

The Corps included an allowance for future inflation for the 218 projects funded for construction for fiscal year 1982. To determine how long it would take to eliminate the construction backlog, we applied varying appropriation levels to the Corps' fiscal year 1982 active project construction backlog of \$22.7 billion. Over the past 10 years, the Corps' construction appropriation has been relatively stable, averaging about \$1.4 billion. The largest construction appropriation the Corps has ever received was about \$1.6 billion in fiscal year 1980. For our analyses, we assumed that the construction backlog was static--no new construction starts and no other cost increases.

It would take the Corps about 16 years to eliminate the construction backlog using the average appropriation of \$1.4 billion. The following table shows the number of years needed to eliminate the \$22.7 billion construction backlog at varying appropriation levels.

<u>Appropriation</u>	<u>Years</u>
\$1.2 billion	18.9
\$1.4 billion	16.2
\$1.6 billion	14.2

When we discussed this report with Corps officials, the Chief of the Programs Division said that the \$35.9 billion (\$22.7 billion and \$13.2 billion, respectively, for projects funded and not funded for construction for 1982) needed to complete active projects shown in the table on page 7 is overstated and should be reduced about 50 percent. He said that the amount is overstated because much of the remaining work is presently not scheduled and will very likely not be budgeted due to lack of local support, remaining benefit-remaining cost ratios being less than 1 at the current interest rate, 1/ project deauthorizations, reclassification of projects to the deferred or inactive categories, and reduced cost estimates which result in reduced balances to complete. The Corps official said that the evaluation for budgetary purposes of the remaining work would be similar to that for new starts.

According to this same Corps official, the \$35.9 billion balance to complete after fiscal year 1981 has been reduced to \$16.2 billion (\$15.4 billion for the active projects funded for construction for fiscal year 1982 and \$0.8 billion for the active projects not funded, including new starts recommended for fiscal year 1983). The \$16.2 billion includes \$6.7 billion for the Mississippi River and Tributaries, a continuing program to provide flood protection in the Lower Mississippi Valley with a long-term schedule that extends into the next century. The remaining \$9.5 billion has been reduced by approximately \$2 billion more by virtue of the fiscal year 1982 appropriations and 1983 appropriations requested, leaving a real balance to complete of about \$7.5 billion, exclusive of Mississippi River and Tributaries. The Corps' revised estimate of balance to complete its active projects is shown in appendixes II and III.

#### Other factors increase the Corps' backlog

Besides inflation, many other factors affect the construction backlog--design changes, project schedule changes, and project modifications. For example, as discussed on page 9, design and project modifications accounted for about 40 percent of the \$13.5 billion cost increase experienced on 242 Corps projects. If cost increases caused by future project modifications and other factors are added to the Corps backlog, a longer time would be required to eliminate the backlog than that shown in the table on page 9. In addition, more new Corps construction starts are contemplated, as discussed on page 19.

#### BUREAU OF RECLAMATION'S CONSTRUCTION BACKLOG

In terms of the number of projects funded for construction and the amount of money being spent on construction, the Bureau's

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1/This ratio is determined by excluding the portion of project benefits already realized and the portion of the project cost spent to date.

construction program is smaller than the Corps', but most of the Bureau's projects are large, costing over \$50 million each. At the beginning of fiscal year 1982, the Bureau had 102 authorized projects estimated to cost about \$16.3 billion to complete. The following table summarizes the dollar value of the Bureau's authorized water projects not completed at the beginning of fiscal year 1982. Unlike the Corps, the Bureau does not include an allowance for future inflation in its cost estimates or use a deferred category for classifying construction projects.

<u>Category</u>	<u>Number of projects</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 81 (note a)</u>	<u>Balance to complete after FY 81</u>
------(billions)-----				
<b>Active:</b>				
Funded for construction for FY 1982	71	\$19.3	\$6.5	\$12.8
Not funded for construction for FY 1982	<u>5</u>	<u>1.3</u>	<u>-</u>	<u>1.3</u>
Total active	76	\$20.6	\$6.5	\$14.1
Inactive	<u>26</u>	<u>2.4</u>	<u>0.2</u>	<u>2.2</u>
Total	<u>102</u>	<u>\$23.0</u>	<u>\$6.7</u>	<u>\$16.3</u>

a/Includes actual expenditures through fiscal year 1980 plus allocations for fiscal year 1981.

Escalating construction costs extend backlog

Since fiscal year 1974, the estimated cost to complete the Bureau's active projects funded for construction has more than doubled, while the number of projects has remained relatively stable. The Bureau's estimated construction costs to complete were \$5.4 billion for 66 projects in fiscal year 1974 and \$12.8 billion for 71 projects at the beginning of fiscal year 1982. (Bureau officials believe the current \$12.8 billion to complete should be lower, as discussed on page 16.) The Bureau's construction appropriations increased about 92 percent, growing from \$285.3 million to \$548.5 million during the same time frame-- appropriations have averaged about \$503 million over the past 10 years. However, the time required to eliminate the backlog of active construction projects has increased by about 4 years during this period. At the fiscal year 1974 rate of construction appropriation (ignoring future inflation), the projects authorized for construction represented a 19-year backlog; at

the fiscal year 1982 rate of construction appropriation (ignoring future inflation), the backlog of active construction projects had climbed to 23 years.

According to Bureau records, inflation is the major reason for project cost increases. For example, on 19 of the projects funded in fiscal year 1982, project construction costs increased by \$8.8 billion since their original cost estimate. Inflation accounted for 81 percent of this increase, cost-estimating change increases based on more complete data amounted to 11 percent, and the remaining 8 percent was attributed to such things as changes in scope and design.

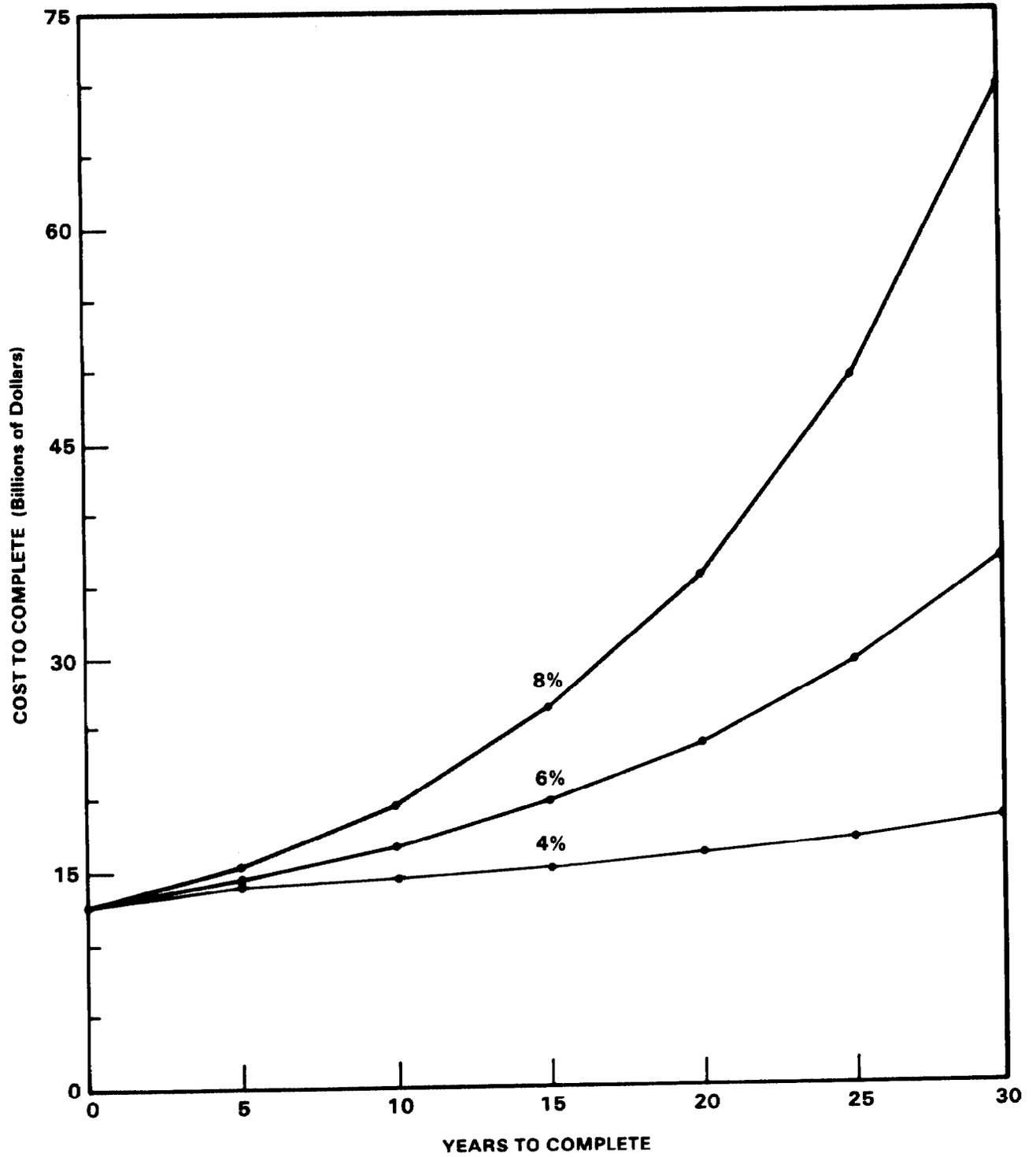
#### Backlog may take years to eliminate

We applied varying appropriation levels and inflation rates to the Bureau's fiscal year 1982 active construction backlog of \$12.8 billion to determine the possible effects of these factors on the backlog over the next 30 years. For purposes of our analyses, we used appropriations of \$440 million, \$550 million, and \$660 million which fall within the range the Bureau has either requested or received for construction. For each of these appropriation levels, we applied inflation rates of 4, 6, and 8 percent. Estimating the rate of inflation is admittedly speculative and provides no guarantee of actual costs to be incurred, but we believe that these rates are reasonable alternative projections for the future since inflation for construction has been as high as 10 percent in recent years. Also, for our analyses, we assumed that the construction backlog was static--construction costs for new construction starts and other cost increases were not included. In performing these analyses, we deducted the appropriation amount from the balance to complete at the beginning of each year. The graphs on pages 13, 14, and 15 illustrate the results of our analyses.

As shown on the graphs, only at a 4-percent inflation rate and construction appropriations of \$550 million and \$660 million will the backlog be reduced, and then it will take over 30 years to eliminate it. At annual inflation rates of 6 percent or more at all appropriation levels used, the backlog will continue to increase and some projects will never be completed.

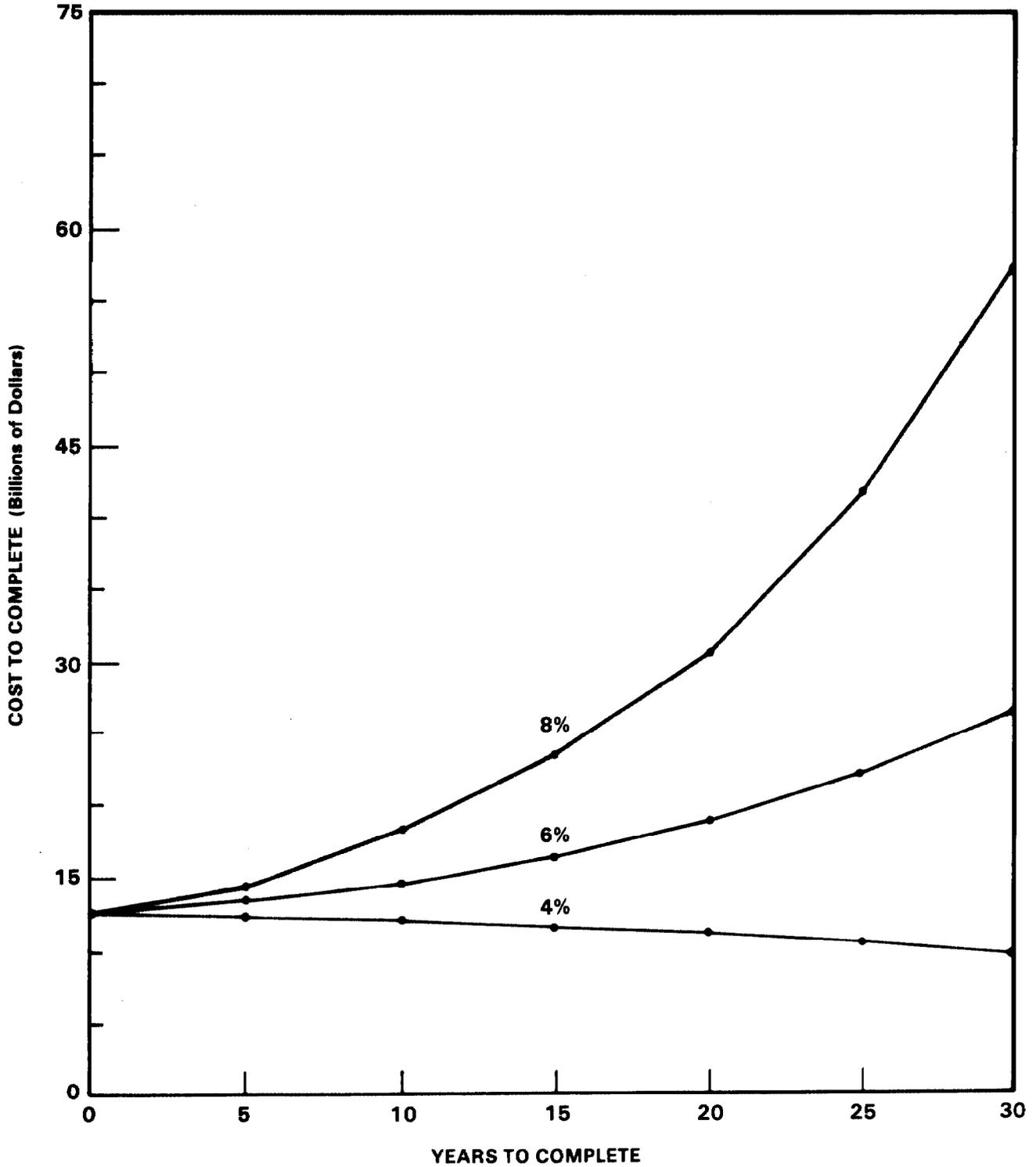
It is not realistic to assume that inflation will be the only factor affecting the Bureau's construction backlog. If other factors increase costs, such as design changes, funding delays, and technical problems, project construction costs will experience additional increases. In addition, more new Bureau construction starts are contemplated which will add to the backlog, as discussed on page 19.

# EFFECT OF INFLATION ON 71 BUREAU PROJECTS FUNDED FOR CONSTRUCTION FOR FISCAL YEAR 1982



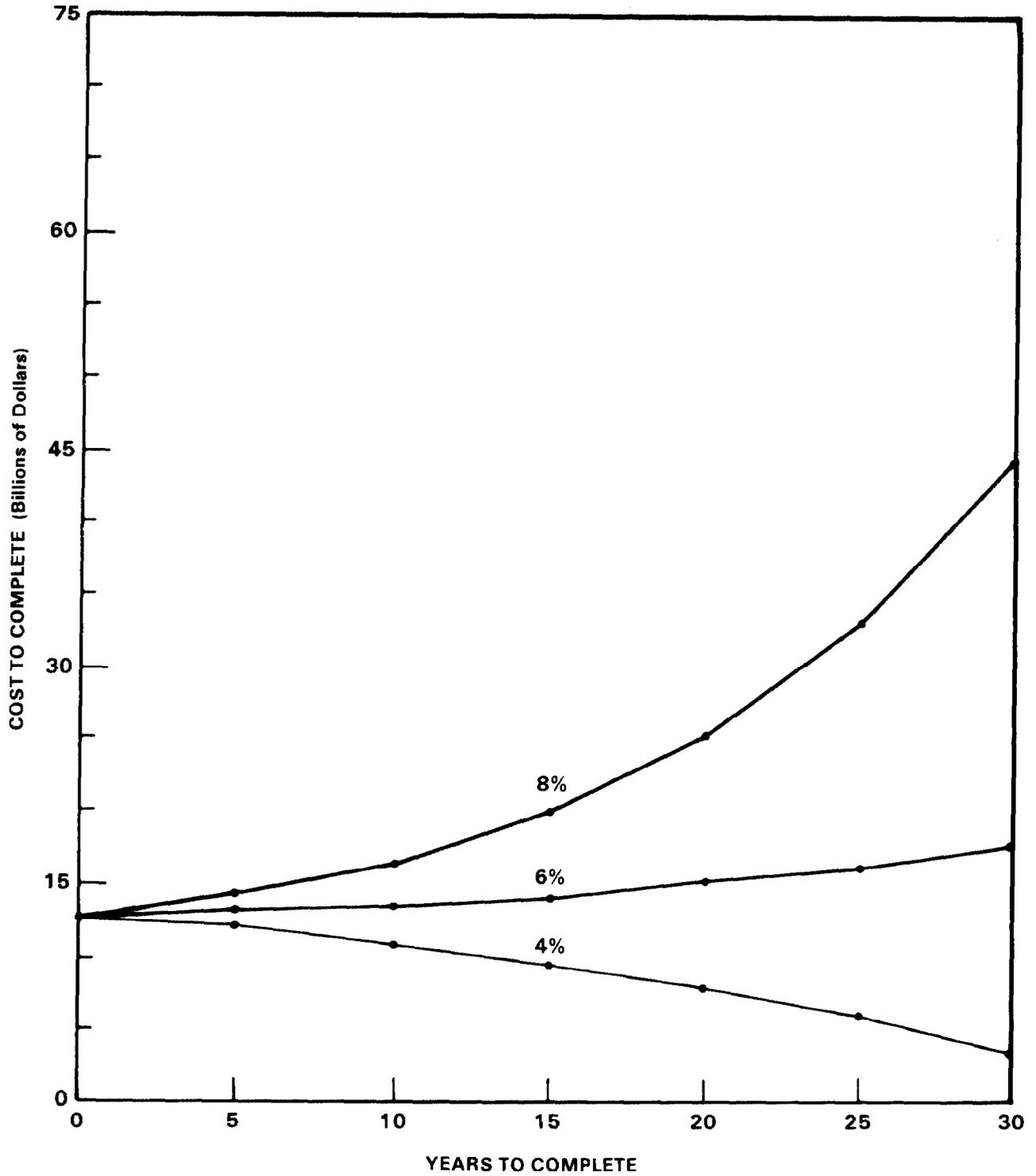
Annual appropriation - \$440 million

**EFFECT OF INFLATION ON 71  
BUREAU PROJECTS FUNDED FOR CONSTRUCTION  
FOR FISCAL YEAR 1982**



Annual appropriation - \$550 million

**EFFECT OF INFLATION ON 71  
BUREAU PROJECTS FUNDED FOR CONSTRUCTION  
FOR FISCAL YEAR 1982**



Annual appropriation - \$660 million

According to the Commissioner, Bureau of Reclamation, the Bureau recognizes that the \$12.8 billion backlog relates to viable ongoing work as well as to a considerable amount of work that will probably never be accomplished or may be done in the future. The Commissioner pointed out that many Bureau projects are made up of several units or divisions. In many instances, units or divisions were included in the legislation because of local or political interests even though data was meager from preliminary investigations. Subsequent investigations have indicated that some units and divisions are not engineeringly feasible or environmentally sound. Also, some projects or components no longer have local or State support, and some repayment entities are not willing or not in a financial position to enter into additional or renegotiated repayment contracts. The Commissioner said that regardless of the reason why a project or component should be eliminated from the viable construction program, the Bureau has chosen not to divert valuable staff resources to make it possible to remove such work from the construction backlog. He said the best that could be accomplished would be a reclassification of portions of projects to the inactive category unless time-consuming deauthorization procedures were initiated. Further, it was his position that few, if any, deauthorizations would be politically supported.

While the Commissioner offered no estimate of the viable ongoing work included in the backlog, he pointed out that the Bureau's backlog table is not a management decision document and has no real or imagined influence on the development of the Bureau's annual budget or the ranking of the work in the construction program. He said there is no incentive or justification to initiate any procedures for the sole purpose of reducing the construction backlog figure related to active projects but there is significant motivation to seek adequate funding to complete viable projects as soon as possible to minimize the impacts of inflation.

CONSTRUCTION COMPETES FOR FUNDS  
WITH OPERATION AND MAINTENANCE  
AND OTHER ACTIVITIES

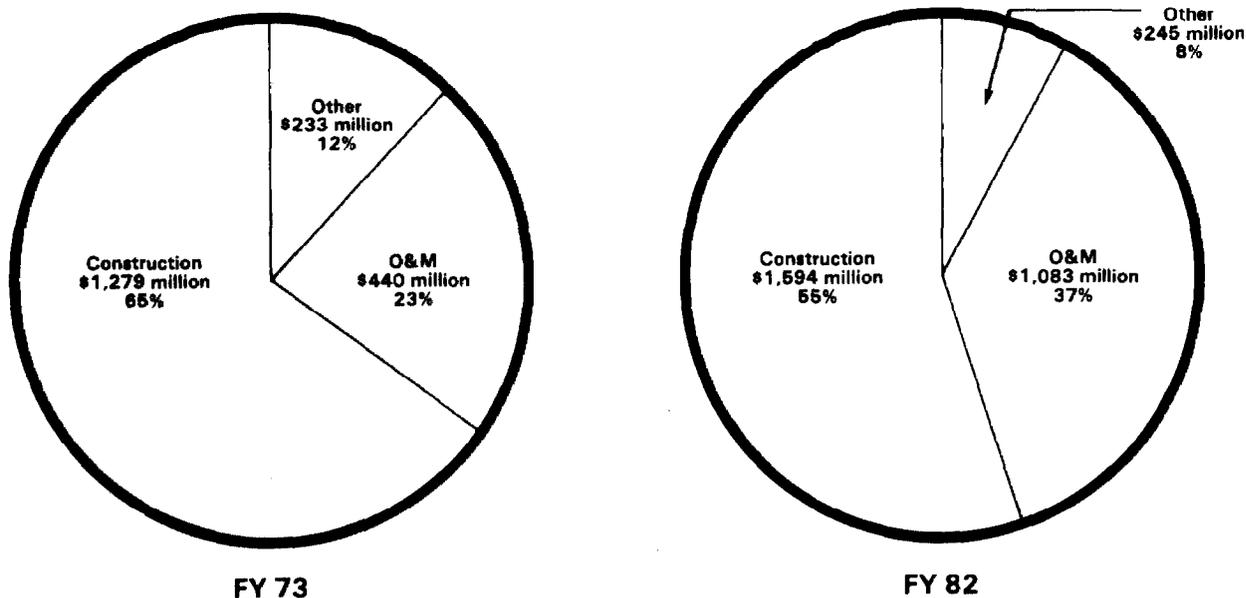
Besides construction-related backlog problems, competition for funds is generated by operation and maintenance (O&M) activities, possible new construction starts, and studies to find solutions to water problems. Both Corps and Bureau officials stated that total budgets for operation and maintenance have been increasing over the years. They attribute this to (1) more projects being completed that must be operated and maintained and (2) existing projects becoming older and thus requiring increased maintenance and equipment replacements. Corps officials are concerned about this upward trend in O&M costs, which they say has been largely at the expense of construction work. Both Corps and Bureau officials believe that O&M costs will continue to increase.

The Corps spends one-third of its civil works budget on O&M

At hearings held in February 1981 before the Subcommittee on Energy and Water Development, House Appropriations Committee, the Corps' Director of Civil Works testified that the operation and maintenance budget has been growing as a percentage of the total budget and this has been at the expense of construction work. He said that the O&M budget has increased to about one-third of the Corps' entire civil works budget, and agreed that without new construction and with the present tight funding situation, this trend is likely to continue.

An analysis of the Corps' water resource appropriation funding over the past 10 years supports this assessment. The Corps' construction budget has decreased as a percentage of the total program. For example, as shown below, construction accounted for about 65 percent and O&M 23 percent of the Corps' fiscal year 1973 appropriations; however, for fiscal year 1982, construction accounted for about 55 percent and O&M about 37 percent.

**CORPS PROGRAM TRENDS**



The Chief, Corps Programs Division, predicted that O&M will continue to grow to such an extent that its budget will probably overtake the construction budget by 1984 or 1985.

Aging Corps projects will continue to need large amounts of O&M money. For example, the Corps estimates that at least \$7 billion will be required to rehabilitate and replace existing navigation facilities on the Nation's waterways. Corps Programs and Operations Divisions officials also indicated that along with existing projects becoming older and newly completed projects coming on line, high interest rates, rapidly rising prices, inflation, and a budget cut in fiscal year 1981 have contributed to a buildup of unfunded maintenance items in recent years. This continued increase has forced the agency to reassess its maintenance policy. For example, the Chief, Special Projects Staff, Corps Operations Division, stated that the Corps is performing (1) major repairs on only those items which have broken down and (2) those critical maintenance priorities identified by headquarters staff. Although Corps officials expressed their continued concern about the maintenance backlog, they believed the Corps could handle this backlog without jeopardizing project operations.

The Bureau's O&M expenditures have increased

The Bureau's O&M expenditures have increased from about \$42 million <sup>1/</sup> in fiscal year 1973 to about \$197 million in fiscal year 1982 and are expected to continue to grow in the future. As a percentage of the Bureau's total water resource appropriations, O&M has increased from about 9 percent in fiscal year 1973 to 26 percent in fiscal year 1982. However, unlike the Corps', most of the Bureau's annual O&M funding comes from moneys reimbursed to the U.S. Government through contracts from users of Federal project water. Most of these moneys are derived from payments made by power, irrigation, and municipal and industrial water supply users.

The Bureau's Special Projects Operations and Maintenance Policy official stated that the increase in the O&M budget is due to new projects being completed, aging projects requiring increased maintenance, salary increases, escalating fuel costs, and rampant inflation. In addition, new program components, such as identifying and inventorying cultural artifacts found during project construction, are being placed under the O&M umbrella.

To deal with these cost increases, Bureau officials have indicated that some routine preventive maintenance is performed at longer than planned intervals so that critical maintenance, like hydropower generator rewinds, is accomplished. In addition, the Bureau has identified low-priority maintenance items and repair work which are performed only if money is available. By

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<sup>1/</sup>This figure does not include O&M expenditures for the Western Area Power Administration, whose functions were transferred to the Department of Energy effective October 1, 1977.

taking these management actions and shifting funds within the O&M account, the Bureau's Special Projects Operations and Maintenance Policy official stated that the Bureau has been generally able to fund high-priority maintenance requirements.

New construction starts will  
add to the construction backlog

The Corps and the Bureau have made 24 new construction starts since fiscal year 1980 but only 1 new construction start during the past 2 years, even though the agencies have recommended new project starts. According to the Secretary of the Interior and the Assistant Secretary of the Army (Civil Works), the Nation's economic conditions no longer allow these agencies to finance a major program of water project construction. Therefore, the agencies are looking to non-Federal agencies to provide greater financial support for new construction.

For example, the Corps has consulted with non-Federal agencies and obtained their voluntary support for greater financial participation in water construction projects. As a result, the Corps has requested nine new construction starts for fiscal year 1983. For the nine new Corps projects costing about \$982 million, the Federal Government will finance about \$204 million while the non-Federal agencies will provide about \$778 million. Like the Corps, the Bureau has been seeking guaranteed additional financing and increased cost-sharing contributions for new projects from non-Federal agencies. In October 1982, the Secretary of the Interior announced that the administration was recommending 10 new reclamation water development project construction starts. Cost-sharing arrangements have been made for one project costing \$109 million (the State is providing \$47 million in upfront financing and the Federal Government is providing \$62 million), and cost-sharing negotiations are underway for a second project estimated to cost \$51 million. The remaining eight new projects will be funded through the Small Reclamation Project Loan Program. Loans granted under this program are made to State or local agencies and are completely repaid to the Federal Government.

Greater non-Federal financial support for new projects will not resolve the present funding problems of the construction backlog because non-Federal funding affects future projects, not those already approved for construction. However, it will reduce future Federal expenditure requirements for new projects.

Water project studies add  
to the backlog problem

The Corps and Bureau requested appropriations of about \$170 million for fiscal year 1983 for studies to find solutions to water problems. Funds for these studies add to the appropriation competition and may reduce the dollars available for project construction. The amount of study money is small relative to the

construction budget and would have minimal impact on reducing the construction backlog; however, as a result of these studies, new projects may be authorized--the cost of which would add to the backlog. Furthermore, this can lead to inefficiencies and ineconomies. For example, since an extensive backlog already exists, new authorized projects may not be funded for many years, thereby resulting in project plans becoming dated. In such cases, additional funding would likely be required to revise the project plans to address then-current conditions and needs before proceeding to the next phase. On the other hand, new project studies could result in viable projects having a higher priority for construction than existing authorized projects. Providing priority funding for these projects would cause them to be built sooner than projects authorized for construction before them.

DEAUTHORIZATION HAS NOT BEEN AN EFFECTIVE  
TOOL FOR REDUCING THE BACKLOG

To eliminate the backlog of authorized but unfunded and locally unsupported water projects, the Congress in the Water Resources Development Act of 1974 (Public Law 93-251) prescribed a procedure for deauthorizing Corps of Engineers water projects which have been authorized for at least 8 years but have not received any appropriations for the last 8 years. An additional benefit of deauthorizing projects is alleviating the uncertainty facing communities located within a project area. For example, communities may be hindered in planning future use of the land and residents may be concerned about possible displacement from their land. Similar deauthorization legislation has not been enacted for the Bureau.

Under this legislation, as amended by Public Law 94-587, October 22, 1976, the Corps of Engineers initiates a lengthy procedure and passes on its deauthorization recommendations to the Congress. Unless either the House Committee on Public Works and Transportation or the Senate Committee on the Environment and Public Works rejects the Corps' recommendations within 90 days (excluding congressional recess periods), the projects on the list are deauthorized. As of November 1982, the Congress had deauthorized 453 projects estimated to cost about \$4.4 billion through this procedure. In addition to this procedure, the Congress may enact specific legislation to deauthorize both Corps and Bureau projects. For example, Public Law 97-128 (95 Stat. 1681), approved December 29, 1981, deauthorized several Corps water projects. Notwithstanding these methods to deauthorize water projects, the backlog of authorized unfunded projects is large.

The Chiefs of the Corps Policy Division and Programs Division told us that the 453 projects deauthorized thus far under Public Law 93-251 have had little impact on Corps operations since these projects had been inactive for some time. Most of the 453 projects were deauthorized because they were not economically feasible or did not have local support. We reviewed 128 projects eligible

for possible deauthorization and in March 1982 reported <sup>1/</sup> that 34 were not deauthorized due to the expressed opposition of local interests. The Chief of the Corps Policy Division recently reported that over 300 projects await deauthorization action under Public Law 93-251, Section 12; however, due to current budget constraints, the Corps has been unable to conduct studies and make deauthorization decisions except for a few of these projects.

A former Acting Director, U.S. Water Resources Council, told us that the deauthorization process has not been effectively used for reducing water construction backlogs. He said the time frames for deauthorization consideration need to be reconsidered. He suggested that the 8-year time frame for eligibility and consideration be shortened to coincide with changes in the U.S. political cycle in order to allow for more critical examination of projects.

### CONCLUSIONS

The size of the Corps' and the Bureau's construction backlogs has been and will continue to be affected by the relationship between the agencies' appropriations and inflation--whether the amount of the appropriations offsets inflationary cost increases. The current construction backlog may also be adversely affected by several factors such as the addition of new water resources projects, changes in existing or planned projects, continued increases in O&M expenses, and any sizable unscheduled expenditures like the Corps' estimate of at least \$7 billion to rehabilitate and replace existing navigation facilities on the Nation's waterways. Under optimum economic conditions--stable and adequate appropriations, low inflation, moderate expenses, etc.--the backlogs may be reduced and even, years down the road, eliminated.

Corps and Bureau officials are of the opinion that the agencies' actual construction backlogs are smaller than identified in this report. However, even with a reduced backlog, as suggested by the Corps and Bureau, it will take many years to eliminate the backlog, especially if the factors cited above are considered. In addition, the future of the projects included in the backlog is not a decision to be made solely by the agencies involved. The value of the construction backlogs we identified are based on active projects funded by the Congress for construction for fiscal year 1982. The final decision on future construction appropriations for, or the deauthorization in whole or in part of, these projects rests with the Congress.

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<sup>1/</sup>"Information on Corps of Engineers Deauthorization Program for Water Projects" (CED-82-55, Mar. 23, 1982).

OPTIONS FOR LESSENING THE  
CONSTRUCTION BACKLOG PROBLEM

Reducing the water project construction backlog is a difficult issue facing the Federal construction agencies, the administration, and the Congress. Several options are available which could help to lessen the backlog problem and provide for more timely completion of projects. Each option has advantages as well as disadvantages.

- Option I. Increase the annual water project appropriations.
- Option II. Require the non-Federal sector to contribute a more substantial portion of project costs.
- Option III. Acknowledge that all projects currently authorized or under construction will not be built, which would require establishing a priority ranking system of projects for funding and possible deauthorization of some.

Also, combinations of these options could be adopted. The options listed are not intended to be all-inclusive but were the ones most frequently suggested by various water resource officials we contacted. We discussed options for the backlog problem with Corps and Bureau headquarters officials in the planning, policy, and programming areas. In addition, we obtained the views of knowledgeable officials within the Water Resources Council, the Congressional Research Service, and the Water Resources Congress.

Option I--Funding increases

Increasing annual water project appropriations is one way to reduce the backlogs and speed up the completion of projects provided that the funding increases are more than cost increases caused by inflation and other factors. For example, it would take the Corps at least 14 years to eliminate its fiscal year 1982 active construction backlog at the \$1.6 billion appropriation level. Likewise, for the Bureau our analyses indicate that at an annual appropriation level of \$660 million, the Bureau's fiscal year 1982 active construction backlog will not be eliminated assuming a 6-percent annual inflation rate; at 4-percent inflation, it would take over 30 years to eliminate the backlog. This type of funding--\$1.6 billion for the Corps and \$660 million for the Bureau--would allow steady progress for those projects under construction but would require an increase in annual water project construction appropriations above the annual amounts generally appropriated over the past 10 years. The disadvantage is that larger appropriations would be required than are currently being provided at a time when the Federal Government is emphasizing reduced spending. Historically, large increases in water appropriations have not occurred.

## Option II--Cost sharing

Under the current economic climate, the pressure to reduce Federal spending is enormous. The administration is actively pursuing a policy of increased cost sharing by non-Federal sponsors for new construction starts which could reduce Federal expenditures for those projects.

One way to infuse increased amounts of non-Federal money into the project construction program is for States, local entities, or other beneficiaries to share more costs. The administration has stated that changes need to be made in the existing cost-sharing rules. It believes that users should pay a larger share of major water project costs for at least two reasons. First, the Nation's economic condition no longer allows the Federal Government to finance a major program of project construction. Second, the administration appears to be strongly committed to the principle that project beneficiaries should pay for "vendible services" (those with a salable outcome, such as power, water supply, or recreation). Following this policy, the Assistant Secretary of the Army (Civil Works), testifying before the Energy and Water Development Subcommittee, House Committee on Appropriations, in May 1982, sought to reprogram fiscal year 1983 funds to enable the Corps of Engineers to begin nine new hydroelectric and flood control projects. The new cost-sharing scheme for the projects would require local interests to pay more of the project costs--from 35 percent for flood control to 100 percent for hydropower. Total cost for the projects would be \$982 million, of which \$204 million would be Federal and \$778 million would be local financing.

Like the Corps, the Bureau has been negotiating cost-sharing arrangements for its fiscal year 1983 new construction project starts. For one project, the State is providing over 43 percent (\$47 million) of the project's estimated cost of \$109 million in upfront financing, and negotiations are underway for a second project costing about \$51 million. The remaining proposed new starts are in loans which will be completely repaid to the Federal Government.

Cost sharing, as currently being proposed by the administration, applies only to new projects and therefore will not resolve the present funding problem of the construction backlog. The Chief of the Corps Programs Division said that if current cost-sharing proposals are adopted, fewer new construction starts would be likely than under the current system and the corresponding Federal funding obligation would be reduced because non-Federal entities would be paying more of the costs. In addition, by requiring that non-Federal entities contribute a more substantial portion of water project costs, greater care in selecting projects for construction could result. Obviously, cost-sharing proposals such as those discussed above could be extended to projects under construction; however, this would likely require authorizing legislation.

There are some disadvantages to greater cost sharing. The Chief of the Corps Policy Division told us that it is doubtful that all non-Federal entities will put sufficient priority on water projects to allot the financial resources or be willing to undertake this additional funding responsibility, especially in times of tight budgets. Also, financially better off non-Federal entities may be favored even though the need for these projects may not be as great as others located in communities less financially capable.

Several approaches are available for non-Federal entities to consider in financing their share of costs. For example, in a May 1981 report, <sup>1/</sup> we mentioned three possible alternative methods for financing either the projects or their incomplete portions. These methods include (1) States or others borrowing funds from the Federal Government and repaying through user charges, (2) States issuing long-term bonds with repayment through user charges, and (3) States financing portions of uncompleted projects through general revenue funds.

### Option III--Setting priorities

Option III is probably the most controversial, requiring major changes in the selection and funding process. This option would require the Congress and the administration to acknowledge that some projects that have been authorized will not be built. To do this would require establishing a system which allows for priority ranking of Federal water projects. Objective criteria for setting priorities among the authorized projects would need to be developed under this option. Although congressional and administrative actions in recent years have demonstrated increased concern and changing attitudes toward water project construction, they have not solved the problem. The solution will not be easy since many factors--economic, social, environmental, and political--will need to be considered and evaluated. As shown in appendixes II and III, the Chief, Corps Programs Division, has ranked projects for future funding; however, the final decision on future construction appropriations rests with the Congress.

Establishing a priority system of ranking authorized projects should not be viewed as a panacea to eliminate the construction backlog or speed up the building of water projects. However, establishing such a system offers many potential benefits because the Congress and the administration will know which of the many proposed water projects would seem to have the highest priority and the resulting funding process could reflect those priorities. Many marginal projects could be postponed, scaled down, or deauthorized and construction expenditures thereby reduced while more

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<sup>1/</sup>"To Continue or Halt the Tenn-Tom Waterway? Information To Help the Congress Resolve the Controversy" (CED-81-89, May 15, 1981).

economically and environmentally sound projects are built. A disadvantage of this option is that some projects under construction may not be built, which raises the possibility of half-built dams and half-dug canals littering the landscape and resulting in loss of investment to date without benefits being derived.

Most of these ideas are aimed at reducing the water project construction backlog. The Chief of the Policy Division at Corps headquarters told us that given the current appropriation levels and budget constraints, the only realistic way to eliminate the backlog is to deauthorize the deferred and inactive projects. He pointed out that this would encompass most of the authorized projects not currently being funded for construction.

HOW WATER RESOURCES PROJECTS ARE  
INITIATED, PLANNED, AND AUTHORIZED

The water project planning processes used over the years by the Corps of Engineers and Bureau of Reclamation have some differences mainly because the Corps obtains congressional approval to perform project feasibility study and construction in one step whereas the Bureau is required to do this in two steps. Section 8 of the Federal Water Project Recreation Act (Public Law 89-72, 79 Stat. 213, 217) requires the Bureau to seek congressional authority to perform feasibility investigations under reclamation laws for any water resource project (the Corps has no similar requirement) and the Bureau subsequently must obtain separate approval to begin construction. This chapter points out those differences and indicates changes that have been made or proposed by the agencies to revise the processes. Agency officials believe the revised processes will significantly reduce the overall cost of water resource projects and also make the Corps and Bureau processes more similar.

CORPS OF ENGINEERS' PLANNING PROCESS  
FOR WATER RESOURCES DEVELOPMENT PROJECTS

The overall process of initiating, planning, and authorizing a project requiring specific congressional authorization can be grouped into four phases: (1) study authorization, (2) study accomplishment, (3) study review and project construction authorization, and (4) preconstruction planning, engineering, and design.

The Corps defines its planning process as the time from the identification of a water resources problem until a solution is recommended by the Chief of Engineers to the Secretary of the Army. The process includes the first three phases mentioned above.

Study authorization

Local citizens normally request Federal assistance from Members of Congress to solve water resources problems. The Congress, either through legislation or resolution, authorizes the Corps to conduct a study and report its findings and recommendations.

Study accomplishment

After the study is authorized, the Corps requests funds for the study through the budget process. The applicable Corps district engineer begins the study after funds are appropriated and allocated. Generally, a time delay of 1 or more years exists between study authorization and study funding, which are separate congressional actions.

Typically, a study begins with a preliminary (reconnaissance) study of the water resource problem to determine if it warrants spending time and money on a detailed study. During this phase, emphasis is placed on identifying the problems, concerns, needs, and opportunities of the study area. Coordination with the public begins during this phase. If the preliminary study indicates that plans are feasible, the Corps district continues the study and develops preliminary alternatives to solve the water resource problems. As the study nears completion and the most feasible plan becomes apparent, general coordination with the public is continued. The draft environmental impact statement is developed and coordinated, a public meeting is usually held, and the draft feasibility report is written.

After completing the report, the district engineer submits the report to the division engineer for review. The division engineer submits the report and the results of the division review to the Board of Engineers for Rivers and Harbors. <sup>1/</sup> The Board, an independent review group with a staff in the Washington, D.C., area, is required by law to assess all Corps study reports specifically authorized by the Congress, except for those which are under the jurisdiction of the Mississippi River Commission. At this time, the division engineer issues a public notice and invites those who wish to comment to furnish their views to the Board.

#### Study review and project authorization

The Board or the Commission assesses the district's and the division's recommendations and issues its findings and recommendations to the Chief of Engineers. The Chief of Engineers then files the report, including the final environmental impact statement, with the Environmental Protection Agency and coordinates the proposed Corps report with the Governors of the affected States and other interested Federal departments and agencies.

After considering the Federal agencies' and States' comments, the Secretary of the Army and the Office of Management and Budget (OMB) review the report before it is submitted to the Congress. The House Public Works and Transportation Committee and the Senate Environment and Public Works Committee may hold hearings and include the project in an authorization bill. If this bill is enacted, the Corps is authorized to conduct preconstruction planning and engineering.

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<sup>1/</sup>Reports on the Mississippi River delta are sent to the Mississippi River Commission instead of the Board.

### Preconstruction planning and engineering

Before construction can begin, certain activities, such as preconstruction planning studies, detailed engineering studies, and development of plans and specifications, need to be accomplished. As with the feasibility study phase, the Congress must appropriate funds to perform such activities. OMB reviews and approves all project funding requests before they are sent to the Congress. Several years may elapse before funds for preconstruction planning and engineering are approved.

After the Appropriations Committees complete hearings, a bill containing those projects which merit Federal support is referred to the full Congress. After passage it then goes to the President for signature. The Secretary of the Army and the Chief of Engineers are given authority and funds to initiate preconstruction planning and engineering for the construction of the projects included in the act. Generally, further appropriations are required in succeeding years until preconstruction planning and design is completed.

The preconstruction planning and engineering phase begins with a review and update of the basic plan authorized and proceeds through more detailed design to produce construction plans and specifications along with firm cost estimates. A public meeting is usually held in connection with these studies. After sufficient engineering and design have been completed to award the initial construction contracts, the Secretary of the Army enters into formal agreements with non-Federal interests to fulfill their obligations, as authorized by the Congress. The Congress then appropriates initial construction funds and construction starts.

### Recent improvements in the planning process

Because the time necessary to complete a water resources project may exceed 25 years, the Corps has focused efforts on the need to make the project planning process more efficient and responsive. In fiscal year 1981, the Corps introduced changes to reduce the time needed to complete water resources project studies and projects' advanced engineering and design. These included (1) establishing new guidelines and regulations consolidating and streamlining the study formulation and review process and (2) obtaining the authority to continue to fund planning and preconstruction engineering for high-priority projects without the need for congressional authorization.

BUREAU OF RECLAMATION'S PLANNING PROCESS  
FOR WATER RESOURCES DEVELOPMENT PROJECTS

The Bureau's preauthorization study process consists of two steps--an appraisal investigation and a feasibility study. The appraisal investigation is a cursory examination of a problem to determine whether feasibility studies are justified. The feasibility study is an indepth investigation of the problem, including a detailed examination of the project's technical facets, a review of the local sponsors' capability to repay their share of the project's costs, and the preparation of environmental compliance documents. Feasibility studies involve detailed coordination between local, State, and Federal entities.

Each fiscal year the Commissioner of Reclamation requests, as part of the Bureau's general investigation budget, funds to conduct general investigation planning studies. The budget is submitted through the Secretary of the Interior and OMB and then to the Congress. After the Congress appropriates funds, the Commissioner of Reclamation apportions funds to regional directors to initiate or continue the appraisal investigation.

According to Bureau officials, during the appraisal investigation the field staff coordinates to a limited degree with the local sponsors, local and State governments, and other Federal agencies. After completing the investigation, the regional director submits the appraisal report for concurrent review to the Commissioner's Office in Washington, D.C., and the Bureau's Engineering and Research Center in Denver, Colorado, before it is transmitted to the Congress. If the project appears favorable (project benefits are projected to be greater than costs) and warrants further study, the appraisal report is used as a basis for obtaining authority to conduct a feasibility study.

As required by Public Law 89-72 (79 Stat. 213), the Congress must specifically authorize the feasibility study before the study may be undertaken. After receiving congressional approval to conduct a feasibility study, the Bureau obtains funding to initiate the study through the annual budget process. Under no circumstances can the Bureau engage in a feasibility study until the appropriation bill is signed and OMB apportions the money for the study.

Like the appraisal report, the completed feasibility study report is sent in draft form to both the Engineering and Research Center and the Commissioner's office for review. After it has been revised by the regional office to accommodate the comments received, the Commissioner coordinates the report within the Department of the Interior and with the involved States and interested Federal agencies to obtain their final views on the project. After completing this coordination, the Commissioner

sends the report to the Secretary of the Interior for approval, who in turn transmits it to OMB for advice as to the project's relationship to the President's program. After receiving OMB's approval, the feasibility report is provided to the Speaker of the House and the President of the Senate. The appropriate House and Senate committees consider legislation to authorize the project. If the Congress and the President approve and funds are appropriated, the Bureau initiates advanced engineering and design of the project. The authorizing legislation places an appropriation ceiling on the project's cost. This ceiling cannot be exceeded, except by an amount for inflation, without obtaining further congressional authorization.

The Director of the Bureau's Planning Policy Staff told us that the planning process has taken an average of 17 years from the time appraisal investigation funds are requested until project construction begins. According to him, significant amounts of time--4 to 6 years--are consumed by delays in processing appraisal and feasibility reports and awaiting necessary authorizations and funding.

#### Revised planning process

The Bureau is implementing scheduling techniques to address many of the factors contributing to the lengthy study process and is revising its planning process to reduce the time needed to complete a study by one-third to one-half. These revisions would allow the agency to obtain construction authorization and funding concurrently while the Bureau is conducting advance planning activities. The Bureau also proposes to combine elements of the current appraisal and feasibility study phases. In addition, legislative changes to be proposed give the Secretary of the Interior the authority to initiate detailed studies, rather than wait for congressional authorization, and to decide the level of detail the study will address.

According to the Bureau's Director, Planning Policy Staff, the Secretary of the Interior has approved the revised planning process and is holding discussions with the Corps of Engineers to more fully define the details of the proposed revisions and implementation strategy. The Director told us that if the Congress approves revisions to the current Bureau authorization process, the Corps and the Bureau would use the same process. The Bureau plans to consult with the responsible congressional oversight committees to test their acceptance of the proposal. The revised process could be in place by 1984 if the Congress adopts the necessary legislation.

LIST OF ACTIVE CORPS PROJECTSFUNDED FOR CONSTRUCTIONFOR FISCAL YEAR 1982

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
------(000 omitted)-----				
Alabama:				
Jones Bluff Lock and Dam	\$ 86,200	\$ 81,000	\$ 5,200	\$ 5,025
Tennessee-Tombigbee Waterway	1,780,000	1,099,396	680,604	636,864
West Point Lake	131,900	129,546	2,354	-
Alaska:				
Chena River Lakes	256,000	157,740	98,260	46,000
Snettisham	69,000	1,220	67,780	-
Arizona:				
Indian Bend Flood Control	31,600	23,388	8,212	8,212
Phoenix and Vicin- ity (Stage 2 and remaining work)	282,000	13,519	268,481	268,481
Arkansas:				
Channel Improvement	4,941,000	1,178,312	3,762,688	3,762,688
McClellan-Kerr Arkansas River Navigation System Locks and Dams	551,000	521,494	29,506	29,506
Mississippi River Levees	1,513,000	453,641	1,059,359	1,059,359
Norfolk Lake Highway Bridge Construction	42,400	27,472	14,928	14,928
Ouachita and Black Rivers	233,000	153,167	79,833	12,265

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
------(000 omitted)-----				
Arkansas:				
Red River Levees	\$ 55,100	\$ 49,110	\$ 5,990	\$ -
St. Francis Basin	354,000	211,140	142,860	159,285
California:				
Crescent City Harbor	3,700	1,678	2,022	2,022
Cucamonga Creek	113,000	68,566	44,434	40,104
Dry Creek (Warm Springs) Lake and Channel	274,000	201,487	72,513	50,211
Los Angeles-Long Beach Harbors	29,600	16,177	13,423	13,423
New Melones Lake	370,000	311,489	58,511	30,231
Sacramento River Bank Protection Project	96,000	42,067	53,933	3,900
Sacramento River and Major & Minor Tributaries	11,900	11,322	578	578
San Diego River and Mission Bay	19,200	11,585	7,615	-
San Francisco Bay to Stockton	166,000	9,409	156,591	156,591
San Jacinto River Levee and Bautisto Creek Channel	106,570	37,700	68,870	7,630
Santa Maria Valley Levees	12,600	8,075	4,525	4,525
Santa Paula Creek Channel	34,600	4,281	30,319	-
Walnut Creek	77,500	26,226	51,274	51,274

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<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
----- (000 omitted) -----				
Colorado:				
Bear Creek Lake	\$ 61,700	\$ 61,488	\$ 212	\$ 212
Chatfield Lake	92,900	85,881	7,019	7,819
Trinidad Lake	7,200	-	7,200	7,200
Connecticut:				
New London Hurricane Barrier	7,210	6,475	735	735
Delaware:				
None	-	-	-	-
District of Columbia:				
Potomac Estuary Pilot Water Treatment Plant	21,400	13,996	7,404	7,404
Florida:				
Canaveral Harbor	20,900	7,342	13,558	-
Central and Southern Florida	1,380,000	255,476	1,124,524	102,816
Dade County	46,500	21,939	24,561	24,561
Four River Basins	230,000	61,736	168,264	9,520
Pinellas County	17,800	1,540	16,260	2,300
Port Everglades Harbor	34,100	20,118	13,982	13,982
Tampa Harbor (Main Channel)	198,000	96,605	101,395	101,395
Georgia:				
Hartwell Lake (Fifth Unit)	17,700	8,105	9,595	9,595

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
------(000 omitted)-----				
Georgia:				
Hartwell Lake Upper and Lower Diversion Dams	\$ 9,900	\$ -	\$ 9,900	\$ 9,900
Richard B. Russell Dam and Lake	462,000	203,574	258,426	154,679
Guam:				
None	-	-	-	-
Hawaii:				
Barbers Point Harbor	76,000	1,890	74,110	74,110
Kahului Harbor	6,200	-	6,200	6,200
Idaho:				
Dworshak Dam and Reservoir	326,500	316,017	10,483	10,483
Lewiston Clarkston Bridge	21,000	17,010	3,990	3,990
Placer Creek	5,980	2,605	3,375	3,375
Illinois:				
East Moline	11,400	4,950	6,450	6,450
East St. Louis and Vicinity	93,300	9,172	84,128	15,600
Fulton	17,300	11,002	6,298	6,298
Illinois Waterway Dresden Island Lock and Dam	15,600	9,334	6,266	6,266
Illinois Waterway Starved Rock Lock and Dam	14,500	8,921	5,579	5,579
Kaskaskia Island Drainage and Levee District	13,300	4,855	8,445	8,445

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<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
----- (000 omitted) -----				
Illinois:				
Kaskaskia River Navigation	\$ 160,000	\$ 122,256	\$ 37,744	\$ 37,744
Little Calumet River	7,210	458	6,752	-
Lock and Dam No. 26 Mississippi River at Alton	871,000	80,382	790,618	709,118
Locks and Dam No. 52	11,900	4,601	7,299	7,299
Locks and Dam No. 53	7,200	2,257	4,943	4,943
McGee Creek Drainage and Levee District	21,700	9,422	12,278	12,278
Milan	13,300	1,973	11,327	11,327
Rockford	8,380	5,929	2,451	2,451
Smithland Locks and Dam	271,000	259,412	11,588	5,364
Wood River Drainage and Levee District	18,000	14,855	3,145	3,145
Indiana:				
Beverly Shores	6,000	6,000	-	-
Cannelton Locks and Dam	97,000	95,893	1,107	1,107
Evansville	55,100	22,169	32,931	32,931
Levee Unit 5	8,630	6,289	2,341	2,341
Newburgh Locks and Dam	104,700	104,000	700	115
Uniontown Locks and Dam	100,900	99,886	1,014	1,014

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
------(000 omitted)-----				
Iowa:				
Bettendorf	\$ 8,690	\$ 987	\$ 7,703	\$ 7,703
Coralville Lake	28,700	16,944	11,756	11,756
Evansdale	4,500	2,271	2,229	2,229
Missouri River Levee System	277,000	77,601	199,399	8,816
Red Rock Lake	4,750	2,700	2,050	2,050
Saylorville Dam	100,800	93,527	7,273	3,497
Waterloo	44,700	38,207	6,493	6,493
Kansas:				
Clinton Lake	57,300	56,108	1,192	1,192
El Dorado Lake	80,200	72,709	7,491	749
Hillsdale Lake	61,000	58,136	2,864	2,864
Pearson-Skubitz Big Hill Lake	17,400	14,487	2,913	2,913
Kentucky:				
Big South Fork National River and Recreation Area	278,000	46,451	231,549	61,101
Cave Run Lake	77,800	46,451	31,349	24,586
Dayton	12,820	12,440	380	380
Laurel River Lake	59,700	51,888	7,812	5,007
Paintsville Lake	59,100	41,907	17,193	17,193
Reelfoot Lake-Lake No. 9	9,610	7,920	1,690	1,690
Southwestern Jefferson County	66,600	25,487	41,113	41,113
Taylorville Lake	102,000	55,340	46,660	36,650
Yatesville Lake	93,800	13,244	80,556	-

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<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
----- (000 omitted) -----				
Louisiana:				
Atchafalaya Basin	\$ 2,370,000	\$ 390,269	\$1,979,731	\$ 184,000
Atchafalaya River and Bayous Chene, Boeuf and Black	33,700	23,700	10,000	10,000
Bayou Bodcau and Tributaries	26,300	4,157	22,143	-
Bayou Cocodrie and Tributaries	31,700	4,089	27,611	-
Grand Isle and Vicinity (Hurri- cane Protection)	8,500	6,545	1,955	-
Lake Pontchartrain and Vicinity (Hurri- cane Protection)	701,000	115,364	585,636	326,000
Larso to Golden Meadow (Hurricane Protection)	55,900	19,832	36,068	33,500
Lower Red River- South Bank River Levees	47,200	18,921	28,279	28,279
Mississippi River Baton Rouge to the Gulf of Mexico	142,000	12,495	129,505	129,505
Mississippi River to Gulf Outlet	573,000	75,470	497,530	-
New Orleans to Venice (Hurri- cane Protection)	162,000	43,654	118,346	118,346
Old River	383,000	85,851	297,149	297,149
Overton-Red River Waterway, Lower 31 Miles	27,200	22,180	5,020	5,020

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
------(000 omitted)-----				
Louisiana:				
Red River Emergency Bank Protection	\$ 51,600	\$ 40,568	\$ 11,032	\$ -
Red River Waterway- Mississippi River to Shreveport	1,611,000	323,711	1,287,289	1,287,289
Tech-Vermilion Basins (Additional Surface Water Supply)	34,779	22,549	12,230	12,230
Tensas Basin	590,000	139,625	450,375	378,295
Vermilion Lock (Replacement)	31,700	1,775	29,925	29,925
Maine:				
None	-	-	-	-
Maryland:				
Baltimore Harbor and Channels (1958 Modifi- cation)	57,900	24,327	33,573	33,573
Bloomington Lake	173,400	169,630	3,770	3,770
Massachusetts:				
Cape Cod Canal Highway Bridges	24,600	15,865	8,735	8,735
Charles River Natural Valley Storage Area	7,650	6,550	1,100	1,100
Clark Point	270	-	270	270
Fall River Harbor	66,100	1,100	65,000	-
Michigan:				
Saginaw River	126,000	21,681	104,319	-
Minnesota:				
Big Stone Lake and Whetstone River	13,000	9,325	3,675	3,675

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<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
----- (000 omitted) -----				
Minnesota:				
Mankato and North Mankato	\$ 93,000	\$ 38,133	\$ 54,867	\$ 54,867
Mississippi River Lock and Dam No. 1	42,600	35,120	7,480	7,480
Roseau River	27,300	1,378	25,922	-
Wild Rice River South Branch and Felton Ditch	5,230	2,536	2,694	2,694
Winona	30,000	11,208	18,792	18,792
Mississippi:				
Tombigbee River and Tributaries	141,000	10,614	130,386	12,685
Yazoo Basin	1,478,000	331,361	1,146,639	774,090
Yazoo River-Belzoni Bridge (Advance Participation)	10,600	1,574	9,026	9,026
Missouri:				
Blue River Channel	141,000	4,806	136,194	136,194
Clarence Cannon Dam and Reservoir	254,000	233,637	20,363	16,252
Harry S. Truman Dam and Reservoir	525,000	465,042	59,958	49,623
Little Blue River Channel	31,700	17,844	13,856	13,856
Little Blue River Lakes	173,000	68,365	104,635	104,635
Long Branch Lake	19,500	17,210	2,290	2,290
Mississippi River between the Ohio and Missouri Rivers (Regulating Works)	237,000	95,246	141,754	141,754

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
----- (000 omitted) -----				
Missouri:				
Perry County drain- age and Levee Dis- tricts Nos. 1, 2, and 3	\$ 8,760	\$ 5,902	\$ 2,858	\$ 2,858
Smithville Lake	88,300	85,337	2,963	2,963
Montana:				
Great Falls	10,700	1,054	9,646	9,646
Libby Additional Units and Reregu- lating Dam	559,000	45,103	513,897	3,900
Libby Dam-Lake Kocanusa	489,000	480,813	8,187	8,187
Nebraska:				
Papillion Creek and Tributaries	83,600	24,592	59,008	20,000
Nevada:				
None	-	-	-	-
New Hampshire:				
None	-	-	-	-
New Jersey:				
Elizabeth River Flood Control Project	59,800	30,630	29,170	29,170
New Mexico:				
Santa Rosa Lake	43,400	38,693	4,707	4,707
New York:				
Cattaraugus Harbor	4,340	1,067	3,273	3,273
East Rockaway Inlet and Jamaica Bay	23,400	10,070	13,330	13,330
Ellicott Creek	15,900	1,679	14,221	-
Fire Island Inlet to Montauk Point	260,000	13,303	246,697	-

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<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
----- (000 omitted) -----				
New York:				
Irondequoit Bay	\$ 3,310	\$ 715	\$ 2,595	\$ -
New York Harbor Collection and Removal Drift Project	54,000	9,583	44,417	44,417
North Carolina:				
AIWW- Replacement of Federal Highway Bridges	67,500	6,372	61,128	19,917
B. Everett Jordan Dam and Lake	127,000	88,323	38,677	38,677
Carolina Beach and Vicinity	13,900	2,413	11,487	11,487
Falls Lake	159,000	103,483	55,517	55,517
Manteo (Shallowbag) Bay	88,100	9,902	78,198	-
North Dakota:				
None	-	-	-	-
Ohio:				
Alum Creek Lake	56,300	53,868	2,432	2,047
Ashtabula Harbor	10,500	1,100	9,400	9,400
Caesar Creek lake	64,000	60,406	3,594	1,632
Chillicothe	21,700	10,504	11,196	11,196
Mill Creek	326,000	4,312	321,688	321,688
Muskingum River Lakes (Rehab)	72,400	10,420	61,980	61,980
Muskingum River Lakes (Dam Safety Assurance)	68,800	-	68,800	68,800
Newark	7,000	2,969	4,031	4,031

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balanced to complete (note c)</u>
------(000 omitted)-----				
Ohio:				
Point Place	\$ 7,320	\$ 1,609	\$ 5,711	\$ 5,711
West Harbor	3,510	1,235	2,275	2,275
William H. Harsha Lake	54,800	50,248	4,552	2,116
Willow Island Locks and Dam	78,100	76,151	1,949	409
Oklahoma:				
Arcadia Lake	93,300	14,526	78,774	78,774
Copan Lake	72,200	63,672	8,528	6,525
Sardis Lake	53,600	48,162	5,438	3,233
Skiatook Lake	114,000	63,986	50,014	44,118
Waurika Lake	67,080	66,771	309	309
Oregon:				
Applegate Lake	95,500	92,000	3,500	3,500
Bonneville Second Powerhouse	650,000	540,696	109,304	49,000
Columbia River at the Mouth, South Jetty	3,150	-	3,150	3,150
Elk Creek	108,000	9,009	98,991	-
John Day Lock and Dam, Lake Umatilla	515,000	481,070	33,930	33,930
John Day Lock	7,200	6,555	645	645
Lower Columbia River Basin Bank Protection	24,400	12,565	11,835	11,835
McNary Lock and Dam	319,500	318,602	898	898
Nehalem Bay	12,600	5,500	7,100	7,100

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
----- (000 omitted) -----				
<b>Oregon:</b>				
Willamette River Basin Bank Protection	\$ 32,200	\$ 19,897	\$ 12,303	\$ 12,303
Willow Creek Lake	44,900	10,793	34,107	34,107
<b>Pennsylvania:</b>				
Emsworth Locks and Dam	30,100	7,600	22,500	22,500
Kinzua Dam and Allegheny Reservoir	6,000	-	6,000	6,000
Presque Isle	10,846	7,546	3,300	3,300
Tioga-Hammond Lakes	192,700	186,730	5,970	5,970
Wyoming Valley	16,900	-	16,900	16,900
<b>Puerto Rico:</b>				
Portuques and Bucana Rivers	282,000	47,336	234,664	234,664
<b>Rhode Island:</b>				
Cliff Walk	7,900	5,330	2,570	2,570
<b>South Carolina:</b>				
Cooper River, Charleston River	163,000	108,560	54,440	54,440
Little River Inlet	16,700	5,439	11,261	11,261
<b>South Dakota:</b>				
None	-	-	-	-
<b>Tennessee:</b>				
Mud Lake Pumping Station	3,480	1,060	2,420	2,420
West Tennessee Tributaries	93,700	21,656	72,044	11,000
<b>Texas:</b>				
Aquilla Lake	58,500	30,407	28,093	28,093

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<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
----- (000 omitted) -----				
Texas:				
Arkansas-Red River Basins Chloride Control (Area VIII) \$	54,700	\$ 28,731	\$ 25,969	\$ 25,969
Cooper Lake and Channels	133,500	21,953	111,547	-
Corpus Christi Ship Channel	86,600	21,184	65,416	65,416
El Paso	73,200	32,779	40,421	27,348
Highland Bayou	17,700	10,934	6,766	6,766
Lakeview Lake	261,900	91,670	170,230	98,712
Lavon Lake Modi- fication and East Fork Channel Improvement	70,200	67,787	2,413	2,413
Lewisville Dam	6,770	3,952	2,818	2,818
Ray Roberts Lake	315,700	9,295	306,405	263,605
San Antonio Channel Improvement	72,400	30,018	42,382	42,382
San Gabriel River	143,000	97,472	45,528	-
Taylors Bayou	67,800	1,553	66,247	66,247
Texas City and Vicinity (Hurri- cane Protection)	37,600	31,447	6,153	6,153
Texas City Channel Texas (Industrial Canal)	11,200	4,840	6,360	6,360
Three Rivers	5,800	1,812	3,988	3,988
Vince and Little Vince Bayous	16,300	6,401	9,899	9,899

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
------(000 omitted)-----				
Utah:				
None	\$ -	\$ -	\$ -	\$ -
Vermont:				
None	-	-	-	-
Virginia:				
Fourmile Run, City of Alexandria and Arlington Co.	51,780	48,995	2,785	2,785
Virginia Beach (1962 Modification)	5,750	2,760	2,990	2,990
Virgin Islands:				
None	-	-	-	-
Washington:				
Chief Joseph Dam Additional Units	359,000	298,764	60,236	60,236
Lake Washington Ship Canal	6,000	-	6,000	6,000
Lower Granite Lock and Dam	319,600	315,897	3,703	3,703
Lower Snake River Fish and Wild- life Compensation	184,000	37,429	146,571	105,000
Mill Creek Lake	13,300	6,474	6,826	6,826
West Virginia;				
Beech Fork Lake	46,800	35,617	11,183	6,658
Burnsville Lake	55,300	45,945	9,355	8,970
Levisa and Tug Fork of Big Sandy and Cumberland Rivers	704,000	12,500	691,500	691,500
R.D. Bailey Lake	189,000	178,622	10,378	9,333
Stonewall Jackson Lake	189,000	46,435	142,565	142,565

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
----- (000 omitted) -----				
Wisconsin:				
Prairie Du Chien	\$ 4,040	\$ 2,809	\$ 1,231	\$ 1,231
Wyoming:				
None	-	-	-	-
 Total	 <u>\$38,140,015</u>	 <u>\$15,485,531</u>	 <u>\$22,654,484</u>	 <u>\$15,389,826</u>

a/Includes actual expenditures through fiscal year 1980 plus allocations for fiscal year 1981.

b/The balance to complete figure was obtained from the Corps' authorized construction backlog summary it presented to the House Appropriations Committee during fiscal year 1982 hearings.

c/The revised balance to complete figure was provided by the Chief, Corps Programs Division in November 1982.

LIST OF ACTIVE CORPS PROJECTS NOTFUNDED FOR CONSTRUCTIONFOR FISCAL YEAR 1982

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
------(000 omitted)-----				
Alabama:				
Mobile Harbor - Theodore Ship Channel	\$ 76,700	\$ 53,700	\$ 23,000	\$ -
Montgomery to Gadsden	681,000	9,850	671,150	-
Alaska:				
Bradley Lake	194,000	4,876	189,124	189,124
Kake Harbor	9,400	721	8,679	-
Susitna River Hydro- electric Project	13,860	-	13,860	-
Arizona:				
Gila River - Camels- back Reservoir Site	1,620	323	1,297	-
Gila and Salt River- Gillespie to McDowell	4,580	732	3,848	-
Arkansas:				
Big Creek and Tribu- taries Lower White River	29,898	365	29,533	29,533
Cache Basin	126,000	8,420	117,580	117,580
Lower Arkansas River	33,900	22,726	11,174	11,174
Lower Arkansas River South Bank	19,900	15,676	4,224	4,224
McKinney Bayou	6,350	610	5,740	-
Norfolk Lake Power Units 3 and 4	33,000	1,121	31,879	-

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
----- (000 omitted) -----				
Arkansas:				
Pine Mountain Lake	\$ 57,800	\$ 1,432	\$ 56,368	\$ -
Red River Water- way Shreveport, La. to Vicinity of Index, Ark.	171,000	965	170,035	-
Section 6 Levees	4,000	3,745	255	255
White River Fish Hatchery	6,000	-	6,000	-
California:				
Alhambra Creek	23,800	300	23,500	-
Bodega Bay	3,110	431	2,679	-
Corte Madera Creek	19,000	7,000	12,000	-
Cottonwood Creek	407,000	5,275	401,725	-
Goleta and Vicinity	37,200	500	36,700	-
Merced County Streams	83,100	4,456	78,644	51,119
Noyo River and Harbor	10,800	680	10,120	-
Pojaro River	940	260	680	-
Port Hueneme Harbor	901	-	901	-
Port San Luis - San Luis Obispo	8,430	570	7,860	-
Sac River - Chico- lodge to Red Bluff	12,200	5,645	6,555	-
San Luis Rey River	22,000	1,364	20,636	-
Santa Cruz Harbor	2,850	1,852	998	-

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
------(000 omitted)-----				
California:				
Surfside, Sunset and Newport Beach	\$ 13,100	\$ 6,214	\$ 6,886	\$ -
Sweetwater River	18,100	1,414	16,686	-
Wildcat and San Pablo Creeks	12,800	1,110	11,690	-
Colorado:				
None	-	-	-	-
Connecticut:				
Silver Beach to Cedar Beach	200	63	137	-
Delaware:				
Delaware Coast Protection	35,600	990	34,610	2,475
IWW Delaware River to Chesapeake Bay Chesapeake and Delaware Canal Part II	126,300	99,852	26,448	-
Florida:				
Brevard County	6,900	2,346	4,554	-
Broward County	9,040	5,703	3,337	3,337
Cross Florida Barge Canal	179,000	62,842	116,158	-
Duval County	9,930	5,679	4,251	4,251
Fort Pierce Beach	2,800	1,175	1,625	-
GIWW St. Marks to Tampa Bay	278,000	39	277,961	-
Lee County	2,200	-	2,200	-
Lido Key	1,310	-	1,310	-
Manatee County	7,100	222	6,878	-

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
------(000 omitted)-----				
<b>Florida:</b>				
Mullet Key	\$ 900	\$ 436	\$ 464	\$ -
Palm Beach County	4,380	1,831	2,549	2,549
Tampa Harbor Branch Channel	39,000	-	39,000	-
Virginia Key and Key Biscayne	3,810	1,667	2,143	-
<b>Georgia:</b>				
Lazer Creek Lake	239,000	810	238,190	-
Lower Auchumpkee Creek Lake	182,000	-	182,000	-
Savannah Harbor Extension	7,840	5,290	2,550	-
Spewrell Bluff Lake	333,000	2,170	330,830	-
<b>Hawaii:</b>				
Ala Wai Harbor	356	40	316	-
Kaunakakai Light Draft Harbor	1,020	35	985	-
Kawaihae Small Boat Harbor	1,180	121	1,059	-
Kikiaola Small Boat Harbor	910	193	717	-
Maalaea Small Boat Harbor	3,190	195	2,995	-
Nawiliwili Deep Draft Harbor	3,980	-	3,980	-
<b>Idaho:</b>				
Blackfoot Reservoir	4,700	268	4,432	-
Dworshak Additional Unit	36,800	750	36,050	-

## APPENDIX III

## APPENDIX III

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
----- (000 omitted) -----				
Idaho:				
Lucky Peak Second Outlet	\$ 4,100	\$ -	\$ 4,100	\$ -
Illinois:				
Big Swan Drainage and Levee District	9,970	-	9,970	-
Calumet Harbor and River	24,300	7,130	17,170	-
Eldred and Spankey Drainage and Levee District	10,600	775	9,825	-
Farmers Drainage and Levee District	3,500	-	3,500	-
Fort Chartres and Ivy Landing Drainage and Levee District No. 5	5,870	-	5,870	-
Hartwell Drainage and Levee District	9,780	647	9,133	-
Hillview Drainage and Levee District	9,830	550	9,280	-
Illinois Waterway- Duplicate Locks	1,044,000	2,265	1,041,735	-
Indian Creek Area	15,000	-	15,000	-
Louisville Lake	101,000	1,740	99,260	-
Meredosia Lake and William Creek Drainage and Levee District	7,860	360	7,500	-
Meredosia, Willow Creek and Coon Run River Drainage and Levee District	9,240	440	8,800	-
Moline	19,100	1,069	18,031	-

## APPENDIX III

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<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
----- (000 omitted) -----				
Illinois:				
Nutwood Drainage and Levee District	\$ 7,700	\$ 645	\$ 7,055	\$ -
Rock River Agri- cultural Levee	28,000	455	27,545	-
Russell and Allison Levee	15,800	52	15,748	-
Savanna Small Boat Harbor	327	85	242	-
Scott County Drainage and Levee District	11,500	-	11,500	-
Sny Island Levee Drainage District	2,050	140	1,910	-
Indiana:				
Downeyville Lake	61,600	-	61,600	-
Iowa:				
Davenport	33,500	1,490	32,010	20,806
Missouri River Sioux City-Mouth	424,000	417,322	6,678	-
Kansas:				
Douglas Lake	66,300	-	66,300	-
Kansas City	28,300	24,869	3,431	-
Melvorn and Pomona Lakes Road Improvement	500	-	500	-
Onaga Lake	87,800	2,170	85,630	-
Tuttle Creek Lake Road and Bridge	630	-	630	-
Tuttle Creek Lake Road Improvement	500	3	497	-
Kentucky:				
Falmouth Lake	125,000	1,061	123,939	-

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
------(000 omitted)-----				
Kentucky:				
Kehoe Lake	\$ 43,300	\$ 1,273	\$ 42,027	\$ -
Martin	9,140	213	8,927	-
Louisiana:				
Bayou Lafourche and Lafourche Jump	10,500	1,100	9,400	-
Bushley Bayou	37,400	370	37,030	37,030
Mermentau River Channel Improvement	5,740	1,290	4,450	-
Mississippi Delta Region	26,400	70	26,330	26,330
Morgan City and Vicinity	20,600	554	20,046	-
Red River Water- way Shreveport	466,000	70	465,930	-
Tensas - National Wildlife Refuge	40,000	200	39,800	39,800
West Agurs Levee	650	130	520	-
Maine:				
Dickey Lincoln School Lakes	1,250,000	13,255	1,236,745	-
Jonesport Harbor	8,730	215	8,515	-
Maryland:				
Baltimore Harbor and Channels MD and VA	170,000	855	169,145	-
Ocean City Harbor and Inlet	830	-	830	-
Massachusetts:				
Ipswich River	2,730	-	2,730	-
Lynn-Nahant Beach	1,130	-	1,130	1,130

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
------(000 omitted)-----				
Massachusetts:				
Nookagee Lake	\$ 18,800	\$ 564	\$ 18,236	\$ -
North Nashua River Flood Control	Not Available	300	-	-
North Scituate Beach	230	107	123	-
Pleasant Bay	22,600	-	22,600	-
Plymouthtown Beach	230	6	224	-
Revere Beach Sec. 201	6,480	347	6,133	-
Town Neck Beach	525	-	525	-
Whitmanville Lake	16,000	605	15,395	-
Winthrop Beach	520	177	343	-
Michigan:				
Battle Creek	12,300	4,363	7,937	-
Black River Harbor	1,810	-	1,810	-
Cedar River Harbor	1,160	265	895	-
Cross Village Harbor	2,780	279	2,501	-
Forestville Harbor	2,010	-	2,010	-
Great Lakes Connect Channels	144,000	129,727	14,273	-
Middle Channel - St. Clair River	650	-	650	-
Red Run Drain and Lower Clinton River	117,000	3,805	113,195	-
St. Joseph Shore	2,360	-	2,360	-
Minnesota:				
Bassett Creek	11,400	735	10,665	-
Beaver Bay Harbor	2,510	293	2,217	-

## APPENDIX III

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<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
------(000 omitted)-----				
Minnesota:				
Chaska	\$ 14,900	\$ 644	\$ 14,256	\$ -
East Grand Forks	10,200	338	9,862	-
Guidewall Existing Lock No. 3	2,500	-	2,500	-
Harriet Island	214	9	205	-
Knife River Harbor	1,320	141	1,179	-
Lusten Harbor	6,520	357	6,163	-
Rochester	55,400	1,529	53,871	-
Twin Valley Lake, Wild Rice River	28,800	1,912	26,888	-
Mississippi:				
Greenville Harbor	25,000	619	24,381	24,381
Mississippi River East Bank, Vicks- burg Yazoo	800	-	800	800
Muddy Bayou Control Structure	5,400	5,177	223	223
Tallahala Creek Lake	90,500	3,946	86,554	-
Will M. Whittington Aux. Channel MS- Yazoo Basin	11,673	10,951	722	722
Yazoo River	181,000	1,190	179,810	-
Missouri:				
Angler Use Sites	1,650	-	1,650	-
Hannibal Marion County Mississippi River	575	111	464	-
I-38 Lake	22,900	-	22,900	-
Irondale Lake	51,500	-	51,500	-

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
------(000 omitted)-----				
Missouri:				
Lower Grand River	\$ 30,900	\$ -	\$ 30,900	\$ -
Mississippi River Agric. Area 12	3,500	-	3,500	-
Mississippi River Between Missouri River and Minneapolis, Minnesota	7,825	-	7,825	-
Pine Ford Lake	122,000	3,620	118,380	-
Union Lake	84,000	2,226	81,774	-
Montana:				
Flathead River Near Kalispell	5,520	530	4,990	-
Libby Reregulation Dam Power Units	57,500	475	57,025	-
Miles City	6,300	283	6,017	-
Nebraska:				
Missouri National Recreational River	21,000	600	20,400	-
Nevada:				
Humboldt River and Tributaries	44,600	1,423	43,177	-
New Hampshire:				
Hampton Beach	1,490	261	1,229	-
New Jersey:				
Delaware River, Philadelphia - Trenton	1,540	-	1,540	-
Perth Amboy	82	-	82	-
Raritan Bay and Sandy Hook Bay	8,800	7,793	1,007	-
Stone Harbor	555	-	555	-

<u>State and Project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
----- (000 omitted) -----				
New Jersey:				
Townsend Inlet and Seven Mile Beach	\$ 11,175	\$ -	\$ 11,175	\$ -
New Mexico:				
Cochiti Lake Recreational Road	1,500	-	1,500	-
Rio Grande Roadway-Truth or Consequences Unit	Not Available	255	-	-
Sante Fe River and Arroyo Mascaras	Not Available	718	-	-
New York:				
Ardsley	2,350	300	2,050	-
Dansville and Vicinity	890	440	450	-
Fire Island Inlet - Jones Inlet	38,500	9,312	29,188	-
Moriches Inlet	17,600	931	16,669	-
Port Bay	5,400	-	5,400	-
Port Ontario Harbor	3,500	745	2,755	-
Sawmill R. Elmsford-Greenburg	5,010	490	4,520	-
Shinnecock Inlet	8,570	-	8,570	-
Shooters Island	72,600	100	72,500	-
South Ellenville	6,120	300	5,820	-
North Carolina:				
AIWW Masonboro Inlet	10,800	9,790	1,010	-
Fort Fischer	19,500	675	18,825	-

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
------(000 omitted)-----				
North Carolina:				
Fort Macon State Park	\$ 1,490	\$ 620	\$ 870	\$ -
Morehead City Harbor	41,100	-	41,100	-
Randleman Lake	100,000	3,439	96,561	-
Reddies River Lake	37,700	986	36,714	-
Wrightsville Beach Hurricane Protection	1,890	1,813	77	-
North Dakota:				
Burlington Dam	116,000	5,544	110,456	-
Sheyenne River Flood Control Project	Not Avail- able	2,047	-	-
Ohio:				
Cuyahoga River Basin	16,200	1,057	15,143	-
Fairport Harbor	2,340	-	2,340	-
Geneva-on-the-Lake	2,000	677	1,323	-
Ottawa	13,300	-	13,300	-
Reno Beach - Howard Farms Area	2,050	164	1,886	-
Oklahoma:				
Arkansas - Red River Basins Chloride	754,200	25,165	729,035	-
Big and Little Sallisaw Creek	4,000	235	3,765	-
Boswell Lake	187,000	-	187,000	-
Candy Lake	32,600	4,950	27,650	-
Fort Gibson Lake Power Units	20,200	1,033	19,167	-

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
----- (000 omitted) -----				
<b>Oklahoma:</b>				
Kaw Lake	\$ 111,600	\$ 109,013	\$ 2,587	\$ -
Lukfata Lake	39,900	1,425	38,475	-
Red River Waterway Index to Denson Dam	185,000	100	184,900	-
Sand Lake	24,800	-	24,800	-
Shidler Lake	40,900	568	40,332	-
Tuskahoma Lake	71,700	-	71,700	-
<b>Oregon:</b>				
Catherine Creek Lake	44,800	1,552	43,248	-
Gate Creek Lake	127,000	840	126,160	-
Johnson Creek	4,500	273	4,227	-
Peninsula Drainage District No. 2	2,600	35	2,565	-
Siuslaw River and Bar	26,400	185	26,215	-
Strube Lake and Cougar Additional Unit	97,000	1,775	95,225	95,225
Vancouver Lake Area	19,500	889	18,611	-
<b>Pennsylvania:</b>				
Chartiers Creek	31,000	26,583	4,417	-
Francis E. Walter Dam (Modification)	65,800	200	65,600	-
Hay Creek, Birdsboro	2,600	365	2,235	-
Prompton Lake	32,600	270	32,330	-
Tamaqua	5,920	525	5,395	-
Tocks Island Lake	491,000	65,106	425,894	-

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
----- (000 omitted) -----				
Pennsylvania:				
Tocks Island Lake (Relocation Rt. 209)	\$ 62,770	\$ 195	\$ 62,575	\$ -
Puerto Rico:				
Ponce Harbor	7,070	223	6,847	-
San Juan and Vicinity	790	-	790	-
Rhode Island:				
Bristol Harbor	4,250	300	3,950	-
Westerly	10,100	-	10,100	-
South Carolina:				
Broadway Lake	1,630	99	1,531	-
Hunting Island Beach	6,770	2,881	3,889	-
South Dakota:				
None	-	-	-	-
Tennessee:				
None	-	-	-	-
Texas:				
Big Pine Lake	77,200	1,702	75,498	-
Big Sandy Lake	90,900	675	90,225	-
Brownwood Channel Improvement	34,200	-	34,200	-
Buffalo Bayou and Tributaries	112,300	57,206	55,094	-
Clear Creek	41,800	2,118	39,682	-
Denison Dam Power Unit 3	13,630	-	13,630	-
Duck Creek Channel Improvement	9,000	610	8,390	-
Elm Fork Floodway	42,300	662	41,638	-

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
----- (000 omitted) -----				
<b>Texas:</b>				
Freeport Harbor	\$ 82,300	\$ 793	\$ 81,507	\$ 13,100
Lake Brownwood (Modification)	9,480	840	8,640	-
Lake Texoma (Perimeter Access)	3,000	50	2,950	-
Millican Lake	244,000	3,010	240,990	-
Mouth of Colorado River	22,200	2,019	20,181	20,181
Navarro Mills Lake	2,780	65	2,715	-
Navasota Lake	264,000	-	264,000	-
Neches River and Tribes Salt Water Barrier at Beaumont	20,300	1,200	19,100	-
Pecan Bayou Lake	35,300	-	35,300	-
Port Arthur and Vicinity	57,798	57,698	100	-
Roanoke Lake	90,000	-	90,000	-
Trinity River	940,000	13,444	926,556	-
Wallisville Lake, Trinity River	28,800	24,175	4,625	-
<b>Utah:</b>				
Little Dell Lake	101,000	2,055	98,945	-
<b>Vermont:</b>				
None	-	-	-	-
<b>Virginia:</b>				
Hampton Roads	40,000	27,331	12,669	-
Virginia Beach Streams Canal 2	4,000	325	3,675	2,388

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete (note b)</u>	<u>Corps revised balance to complete (note c)</u>
------(000 omitted)-----				
Washington:				
Raymond Willapa River	\$ 2,730	\$ 560	\$ 2,170	\$ -
Wenatchee Canyons 1 and 2	33,500	544	32,956	-
Zintel Canyon Dam	5,200	385	4,815	-
West Virginia:				
Oceana	4,290	1,015	3,275	-
Wisconsin:				
Green Bay Harbor	3,900	165	3,735	-
Hudson Small Boat Harbor	623	-	623	-
Kenosha Harbor	539	300	239	-
Lafarge Lake and Channel Improvement	68,300	17,972	50,328	-
State Road and Ebner Coulees	29,200	756	28,444	-
Wyoming:				
None	-	-	-	-
Total	<u>d/\$14,766,896</u>	<u>\$1,526,484</u>	<u>\$13,240,412</u>	<u>e/\$779,437</u>

a/Includes actual expenditures through fiscal year 1980 plus allocations for fiscal year 1981.

b/The balance to complete figure was obtained from the Corps' authorized construction backlog summary it presented to the House Appropriations Committee during fiscal year 1982 hearings.

c/The revised balance to complete figure was provided by the Chief, Corps Programs Division in November 1982.

d/Amount includes \$3,320,000 in expenditures for four projects whose total estimated Federal costs were not available.

e/Amount includes \$81.7 million--\$68.7 million Randleman Lake, North Carolina and \$13 million Kahoma, Hawaii--for new start proposals in fiscal year 1983.

LIST OF ACTIVE BUREAU PROJECTSFUNDED FOR CONSTRUCTIONFOR FISCAL YEAR 1982

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete</u>
----- (000 omitted) -----			
<b>Arizona:</b>			
Central Arizona Project (California, New Mexico, Nevada, Utah)	\$ 2,988,745	\$ 781,632	\$ 2,207,113
Colorado River Basin Salinity Control Project, Title I (California)	471,624	174,534	297,090
Gila Project	77,820	72,884	4,936
Salt River Project, Stewart Mountain Dam	8,860	125	8,735
<b>California:</b>			
Central Valley: Auburn - Folsom South	1,968,434	317,291	1,651,143
Miscellaneous Project Programs	853,632	842,734	10,898
Sacramento River Division	323,663	252,765	70,898
San Felipe Division	338,834	72,344	266,490
San Luis Unit	1,140,348	463,871	676,477
Klamath (Oregon)	39,033	30,835	8,198
Orland Stony Gorge Dam	4,846	603	4,243
Orland East Park Dam	6,904	99	6,805
Recreation Facilities at Existing Reservoirs (Colorado, Nevada)	2,808	1,527	1,281

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete</u>
------(000 omitted)-----			
Colorado:			
Colorado River Basin Salinity Control Projects, Title II: Grand Valley Unit	\$ 236,969	\$ 20,149	\$ 216,820
Paradox Valley Unit	84,037	7,982	76,055
Dallas Creek	110,432	36,516	73,916
Dolores	359,322	63,660	295,662
Fryingpan-Arkansas	480,750	425,608	55,142
Grand Valley Projects, Orchard Mesa Division	2,816	-	2,816
San Luis Valley Closed Basin Division	74,869	5,528	69,341
Uncompahgre	5,640	-	5,640
Miscellaneous items (note b)	154,754	29,141	125,613
Idaho:			
Boise, Black Canyon Dam	5,427	179	5,248
Boise, Fayette Division	29,038	25,967	3,071
Little Wood River Project	2,496	2,121	375
Mann Creek Project	4,023	4,007	16
Minidoka Project: Island Park Dam	5,710	2,235	3,475
Minidoka Project: Jackson Lake Dam	6,805	2,404	4,401
Kansas:			
Pick-Sloan Missouri Basin Program: Bostwick Division	57,252	52,939	4,313

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete</u>
----- (000 omitted) -----			
<b>Montana:</b>			
Huntley Project	\$ 7,800	\$ 167	\$ 7,633
Milk River, Sherburne Dam	4,455	455	4,000
Pick-Sloan Missouri Basin Program: East Bench Unit	24,230	22,835	1,395
Pick-Sloan Missouri Basin Program: Lower Marios Unit	46,660	46,260	400
Sun River Project: Gibson Dam	3,329	2,812	517
Sun River Project: Greenfields Division	8,300	3,997	4,303
Sun River Project: Willow Creek Dam	5,600	362	5,238
<b>Nebraska:</b>			
Pick-Sloan Missouri Basin Program: Farwell Unit	42,836	38,296	4,540
Pick-Sloan Missouri Basin Program: Frenchman-Cambridge Division	4,400	3,170	1,230
Pick-Sloan Missouri Basin Program: North Loup Division	252,080	23,057	229,023
Pick-Sloan Missouri Basin Program: O'Neill Unit	364,560	6,214	358,346
<b>Nevada:</b>			
Colorado River Basin Salinity Control Projects, Title II: Las Vegas Wash Unit	104,365	3,259	101,106

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete</u>
------(000 omitted)-----			
Nevada:			
Newlands, Lahontan Dam	\$ 6,700	\$ 903	\$ 5,797
Southern Nevada Water Supply	173,034	161,062	11,972
Washoe (California)	259,137	33,524	225,613
New Mexico:			
Brantley	243,046	9,086	233,960
Carlsbad	5,987	4,976	1,011
San Juan - Chama	109,363	73,499	35,864
Miscellaneous items (note b)	8,485	3,995	4,490
North Dakota:			
Pick-Sloan Missouri Basin Program: Dickinson Unit	6,454	6,204	250
Pick-Sloan Missouri Basin Program: Garrison Diversion Unit	1,097,592	157,461	940,131
Oklahoma:			
McGee Creek	170,133	15,405	154,728
Mountain Park	41,366	41,166	200
Washita, Foss Dam	40,521	30,813	9,708
Oregon:			
Tualatin	57,302	53,370	3,932
South Dakota:			
Rapid Valley Project Deerfield Dam	8,500	1,083	7,417
Texas:			
Nueces River Project	85,988	64,653	21,335
Palmetto Bend	71,219	70,596	623

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete</u>
	----- (000 omitted) -----		
Texas:			
San Angelo	\$ 33,231	\$ 29,447	\$ 3,784
Utah:			
Central Utah Project Bonneville Unit	1,642,491	292,210	1,350,281
Central Utah Project Jensen Unit	76,484	44,044	32,440
Central Utah Project Upalco Unit	90,424	5,335	85,089
Hyrum Dam	9,487	542	8,945
Modifications and Additions to Completed Facilities (Arizona)	16,218	8,507	7,711
Miscellaneous items (note b)	186,515	48,226	138,289
Washington:			
Chief Joseph Dam: Oroville - Tonasket	71,900	7,390	64,510
Chief Joseph Dam: Whitestone Coulee	8,851	7,491	1,360
Columbia Basin: Irrigation Facilities	3,185,532	847,051	2,338,481
Third Powerplant	667,000	554,255	112,745
Yakima, Grandview Irrigation	2,930	5	2,925
Yakima, Sunnyside Valley Irrigation District	13,221	-	13,221
Yakima-Tieton Irrigation District	62,333	-	62,333
Yakima, Outlook Irrigation District	2,517	-	2,517

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete</u>
	------(000 omitted)-----		
Washington:			
Yakima, Sunnyside Board of Control	\$ 13,500	\$ -	\$ 13,500
Wyoming:			
Pick-Sloan Missouri Basin Program: Owl Creek	6,930	6,525	405
Pick-Sloan Missouri Basin Program: Riverton Unit	41,528	24,143	17,385
Shoshone Project: Frannie Division	1,600	-	1,600
Shoshone Project: Garland Division	6,000	5,773	227
Shoshone Project: Heart Mountain	5,500	-	5,500
Shoshone Project: Willwood Division	1,600	549	1,051
Miscellaneous items (note b)	<u>10,946</u>	<u>4,351</u>	<u>6,595</u>
Total	<u>\$19,256,071</u>	<u>\$6,454,204</u>	<u>c/\$12,801,867</u>

a/Includes actual expenditures through fiscal year 1980 plus allocations for fiscal year 1981.

b/Includes such items as recreational, fish, and wildlife facilities. The Bureau does not count these items as a project.

c/Bureau officials believe this amount should be less as discussed on page 16.

LIST OF ACTIVE BUREAU PROJECTSNOT FUNDED FOR CONSTRUCTIONFOR FISCAL YEAR 1982

<u>State and project name</u>	<u>Total estimated Federal costs</u>	<u>Expenditures thru FY 1981 (note a)</u>	<u>Balance to complete</u>
	------(000 omitted)-----		
Colorado:			
Animas La Plata	\$ 520,400	\$ 4,001	\$ 516,399
Pick-Sloan Missouri Basin Program: Narrows Unit	362,235	5,358	356,877
Idaho:			
Upper Snake River Project, Salmon Falls Division	154,114	1,228	152,886
Utah:			
Central Utah Project Uintah Unit	156,953	4,200	152,753
Wyoming:			
Pick-Sloan Missouri Basin Program: Polecat Bench	<u>78,600</u>	<u>755</u>	<u>77,845</u>
Total	<u>\$1,272,302</u>	<u>\$15,542</u>	<u>\$1,256,760</u>

a/Includes actual expenditures through fiscal year 1980 plus allocations for fiscal year 1981.





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